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## 願景 成就國際頂尖一流 大學

國立中山大學以「培育具專業能力、 富前瞻思維及高尚人格素養之社會菁 英與領導人才」、「創造卓越學術價 值,提升國際學術競爭力」及「整合 學術資源,成為南臺灣人才庫孕育搖 籃,帶動大高雄之地方發展」為階段 任務,成就國際頂尖一流大學的願 景。

# VISION To become a worldclass university

National Sun Yat-sen University, by becoming the cradle excellence for southern Taiwan and supporting the development of greater Kaohsiung, aims to be a world-class university through cultivating leaders with ability, vision and integrity, academic excellence and international competitiveness.





## NSYSU中山35<sup>®</sup> OVER超越頂峰 THETOP

## 目標

### 培育具專業能力、富前瞻思維及高尚人格 素養之社會菁英與領導人才

培養學生專業能力,更以人文精神與社會關懷為內涵,孕育窮究事理、實事求是的專業精神及高尚人格,以善盡社會責任。期許畢業生具備整體專業競爭力、包容力、親和力、抗壓性與同理心,以成為具有品德、品質、品味的社會公民。

### **GOALS**

Cultivating leaders with ability, vision and integrity

As a national university, NSYSU fulfills its social responsibility by cultivating and instilling in our students with a strong commitment to professionalism, a passion for scientific learning, and unwavering personal integrity through humanism and social concern.



#### 創造卓越學術價值,提升國際學術競爭力

作為頂尖研究型大學,學術研究是大學的核心,也 是提升教學內涵的動能。為強化教學及研究之能 量,以彈性薪資制度,留住校內優秀人才,並積極 向外延攬創新尖端研究人才及優秀年輕學者:爭取 與國際頂尖人才及跨國學術合作,增進國際合作計 畫及論文發表之質量,以提昇國際學術競爭力;更 積極營造國際化之校園軟硬體,以吸引優秀之外籍 學生。

#### 整合學術資源,成為孕育南臺灣人才庫的 搖籃,帶動大高雄之地方發展

本校除了與成大、中興及中正合組臺灣綜合大學系統外,並積極推動區域整合,101年開始與高雄醫學大學共組攻頂大學聯盟進行全方位合作,103年與金門大學及高雄大學進行相關學術合作,104年與高雄海洋科技大學成立揚帆聯盟並推動兩校合作計畫,不斷積極整合區域學術資源,推動跨校整合型研究計畫,並結合高雄市政府之文教產學推動,帶動大高雄之區域發展。



## Academic excellence and international competitiveness

As a top research university, academic research is our focus and source of teaching excellence. To strengthen teaching and research, we offer a flexible compensation scheme to attract and retain top research talents and young scholars, enhance our competitiveness through international cooperation, and upgrade campus facilities to attract the best overseas students.

### Becoming the cradle of academic excellence for southern Taiwan and to support the development of Greater Kaohsiung

Apart from partnering with, National Cheng Kung University (NCKU), National Chung Hsing University (NCHU) and National Chung Cheng University (NCCU) to form the Taiwan Comprehensive University System, we also formed the Aim-for-the-Top Alliance with Kaohsiung Medical University (KMU) in 2012, established an academic partnership with National University of Kaohsiung and National Quemoy University in 2014, and created the Raising Sail Alliance with National Kaohsiung Marine University in 2015 to promote regional academic integration and inter-university research projects. We also support government initiatives to stimulate regional development.



## 校長的話 From the President



國立中山大學自西元1980年建校至今,適滿35個年頭,35歲的中山大學在國內研究型大學群中雖是最年輕的學府,但是各項表現突出亮麗,名列前茅,與歷史悠久之大學院校,並列頂尖大學,實屬不易。此份榮耀歸自於創校以來,全體師生辛勤耕耘,在每一階段做出重大貢獻,使本校不論在校譽及各項評比上皆有出色成績。

本校自2005年起獲得教育部五年五百 億「發展國際一流大學及頂尖研究中 心計畫」經費補助,第一期成果顯 著,2011年繼續獲得第二期補助,使 本校潛力持續發揮。中山大學在全球 最佳大學排行榜多年均名列全球500 大。《泰晤士報高等教育專刊》「全球 百大新興潛力大學排名」2012至2014 年本校連續三年全國第一;2015-2016英國高等教育調查機構 (Quacquarelli Symonds, QS) 世界 大學排名,中山大學名列第379名,較 去年進步逾50名。此外,104人力業 者2015年「透視畢業生DNA報告」高 薪人才特質表現中,本校整體表現排 名全國第三名,其中,創造性特質表 現名列前茅,顯示不論在學術研究或 培育人才上皆有所建樹。

Since the establishment in 1980, National Sun Yat-sen University celebrates its 35th anniversary today. Despite being the youngest of the research universities in Taiwan, NSYSU has excelled in every field. It is no mean feat to join the ranks of some older universities and to be recognized as one of the top universities in Taiwan. The honor must go to all members of the university. Their crucial contributions at stage are why our university has excelled in terms of our reputation in every assessment.

NSYSU was included in the Ministry of Education's 5-year NT\$50 billion "Aim for the Top University Plan" starting 2005. Our strong performance meant we were chosen in 2011 for the second phase of the program as well. This has allowed our university to continue exploring our full potential. We have maintained our position around the 500 mark among world universities. The Times Higher Education "100 Under 50 Rankings" ranked NSYSU No.1 in Taiwan for 3 consecutive years from 2012 to 2014. The QS World University Rankings 2015-16 placed NSYSU at 379th, up more than 50 places from last year. In

## NSYSU中山35 OVER超越頂峰



「面對著海洋,就等於面對著全世界」這是詩人余 光中眼中的中山大學。學子們徜徉在山風與海潮間 美麗的校園,在山海薰陶之下,擁有大器的眼界; 在南台灣燦爛的陽光下,揮灑創意。「山海胸襟, 熱情洋溢」自由的學風,培育不斷超越自我的社會 菁英領導人才。

35週年,是一個感恩的時刻,近年陸續完成新建的西子樓校友會館、國際研究大樓及台北逸仙會館之路用,恰為校慶之最佳賀禮。感謝全體教職員生辛勤耕耘,及校友們對學校的慷慨挹注,才有今日的成果。35週年,也是一個互相砥礪,追求更高榮耀的時刻。我們期許35歲的中山樹立風格、型塑典範,對國家社會擔負更重要的功能角色。在此勉勵大家以「至於至善」的精神繼續為學校更高更遠的願景目標打拼,在邁向頂尖的過程中,面對每個高如頂峰的挑戰一一超越,以「超越頂峰」自許,為迎接下一個階段而努力。

校長楊弘敦謹識

2015年11月12日

addition, the 2015 "Analysis of Graduate DNA Report" from 104 Job Bank placed NSYSU 3rd overall in Taiwan in terms of attributes for high-income talent. The creativity attribute in particular was the best of the class reflecting our success in both academic research and talent cultivation.

"When you face the ocean, you face the world" was how the poet Kwang-chung Yu saw NSYSU. Set between the mountain breeze and the ocean tides, NSYSU boasts the most beautiful campus in Taiwan. The spirit of "Broad Mind, Energetic Spirit" provides a free environment for students to expand their perspectives and creativity and to become future leaders beyond limits.

The 35th anniversary is a time for remembrance. The completion of the Sizi Alumni House, the International Research Building and the Taipei Sun Yat-sen House serves as the perfect gifts for the anniversary celebrations. I hereby thank all staff and faculty members for their diligence as well as our alumni's generous contributions to the University for making our success today possible.

The 35th anniversary is also a time for mutual encouragement and the pursuit of even greater honors. We look forward to the university taking on a more important role in the national and society. It is our hope that a 35 year-old NSYSU will become a role-model to all. We therefore encourage everyone to embrace the "pursuit of perfection" and strive for even higher goals on behalf of the university. During the journey to the top, let us continue to face every challenge and go "Over the Top" for what is yet to come.

President De Jo

November 12, 2015

### 104學年度行政及學術一級主管 University Officers as of 2015 Academic Year

學術副校長 Senior Vice President (Academic)

黃志青 Jacob Chih-Ching Huang

李美文 Mei-Wen Lee

藝文中心中心主任 Chief Director for Art Center

行政副校長 Senior Vice President (Administration)

吳濟華 Jih-Hwa Wu

人事室主任 Chief Human Resource Officer

黃珊瑜 Shan-Yu Huang

主任秘書 Chief Secretary

蔡秀芬 Shiow-Fon Tsay

主計室主任 Chief Accounting Officer

傅素瑛 Suh-Ing Fuh

教務長 Vice President for Academic Affairs

劉孟奇 Mon-Chi Lio

文學院院長 Dean of College of Liberal Arts

游淙祺 Chung-Chi Yu

學生事務長 Vice President for Student Affairs

葉淑娟 Shu-Chuan Jennifer Yeh

理學院院長 Dean of College of Sciences

周雄 Hsiung Chou

研發長 Vice President for Research & Development

陳英忠 Ying-Chung Chen

工院長院長 Dean of College of Engineering

王朝欽 Chua-Chin Wang

總務長 Vice President for General Affairs

黃義佑 I-Yu Huang

管理學院院長 Dean of College of Management

李清潭 Chin-Tarn Lee

國際事務長 Vice President for International Affairs

郭志文 Chih-Wen Kuo

海洋科學學院院長 Dean of College of Marine

社會科學院院長 Dean of College of Social

Sciences

Sciences

陳宏遠 Houng-Yung Chen

產學營運及推廣教育處處長 Vice President for

Industrial Collaboration and Continuing Education

**Affairs** 

張其禄 Chyi-Lu Jang

溫志宏 Zhi-Hong Wen

圖書與資訊處處長 Vice President for Library and

Information Services

李錫智 Shie-Jue Lee

通識教育中心中心主任 Dean of Center for

**General Education** 

陳孟仙 Meng-Hsien Chen





## 國際學術評價 International Academic Performance

國立中山大學邁入創校35周年,為全國最年輕的研究型大學,除已名列全國頂尖大學外,更積極朝成為世界一流大學目標邁進。在全校教師、學生、校友及行政團隊的長期努力下,國際學術評價年年進步,表現亮眼,上海交通大學「世界大學學術排名」、《泰晤士高等教育專刊》世界大學排名、QS世界大學排行榜多年均名位全球500大。

2015上海交通大學「世界大學學術排名」,國立中山大學名列全球第447名;《泰晤士高等教育世界大學排名》公佈之2014-2015世界最佳大學排行榜,本校名列351-400;2015-2016英國高等教育調查機構(Quacquarelli Symonds, QS)於9月15日公布世界大學排名,中山大學名列第379名,比去年進步逾50名。全國僅本校與台大、清大、交大、成大等5校,進入世界大學排行榜500大之國立大學。

NSYSU will soon celebrate our 35th anniversary and is the youngest research university in Taiwan. We are already an Aim for the Top University Plan member and now strive to become a world-class university. Our international academic reputation has continued to grow through the efforts of every faculty, student, alumni and the administration.

Shanghai Jiao Tong University's "2015 Academic Ranking of World Universities" ranked NSYSU 447th in the world; the Times Higher Education World University Rankings placed NSYSU between 351-400th range; the QS World University Rankings 2015-16 placed NSYSU at 379th, up more than 50 places from last year. NSYSU, NTU, NTHU, NCTU and NCKU are the only five public universities in Taiwan to be included in the Top 500 international universities.



In the 2015 Academic Ranking of World Universities by Shanghai Jiao Tong University, our Engineering, Mathematics, and Information Engineering faculties join the world's top 200, with Mathematics placed between 76-100 (ranked 1st in Taiwan), Engineering placed between 101-150 and Information Engineering ranked between 151-200.

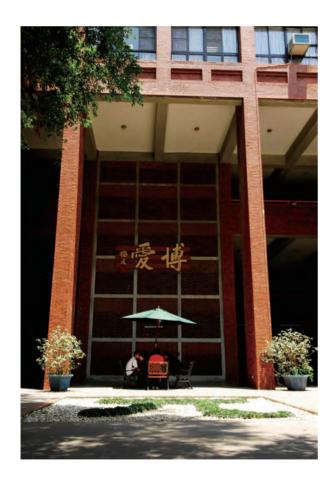
NSYSU is included in the ESI database in 10 fields (as of March 2015), placing us 4rd in Taiwan (behind only NTU, NCKU and NCHU). In Mathematics and Engineering, NSYSU were also counted among the top 200 in the world in average citations and total paper citations respectively.

在學科排名方面,2015年上海交通大學「世界大 學學術排名」本校共有工科、數學、資訊工程3學 科進入全球200強,其中數學領域排名世界76-100,全國第一,工科領域排名世界101-150,資 訊工程領域排名世界151-200。

中山大學進入ESI資料庫共10大領域(2015年3月 查詢),居全國第四名(僅次台大、成大、中興)。 大。



此外,本校在高被引科學家總數(HiCi)項目表現傑出,近10年論文受高度引用率HiCi之篇數,由2006年的13篇增加至2014年的62篇,成長幅度376.9%,已超過2015年自訂目標51篇。高引用學者包括Klaus H. Ploog榮譽獎座教授、聶台岡榮譽講座教授、高橋涉榮譽講座教授、應數系徐洪坤講座教授、高橋涉榮譽講座教授、應數系徐洪坤講座教授、姚任之教授和電機系翁金輅講座教授等人在國際學術領域表現傑出,成績斐然。資管系梁定澎講座教授於2014年獲得「美國資訊管理學會」,頒發代表終身傑出成就的Leo Award獎;2015年材光系吳欣潔助理教授獲得「美國礦物金屬材料學會」的年輕領袖獎;材光系黃志青教授榮獲2015年美國材料學會會士殊榮。





NSYSU's performance under the HiCi (Highly Cited Researcher) category has been outstanding as well. The number of highly cited papers in the last 10 years have grown from 13 in 2006 to 62 in 2014. The increase of 376.9% exceeded the internal target of 51 papers set for 2015. Highly cited researchers such as Honorary Professor Klaus H. Ploog, Honorary Professor Tai-gang Nieh, Honorary Professor Wataru Takahashi, Chair Professor Hong-kun Xu and Professor Jen-chih Yao from the Department of Applied Mathematics, and Chair Professor Kin-lu Wong from the Department of Electrical Engineering have all demonstrated exceptional international academic accomplishments. Chair Professor Ting-peng Liang from the Department of Information Management was presented with the "Leo Award" for exceptional lifetime achievement by the Association for Information Systems in 2014; Assistant Professor Hsin-chieh Wu from the Department of Materials and Optoelectronic Science received the Young Leader Award from The Minerals, Metals & Materials Society in 2015; Professor Jacob Chih-ching Huang was named a Fellow of the American Society for Metals (ASM International) in 2015.





## 關於中山 About NSYSU

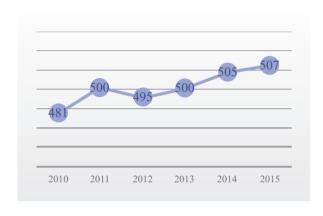
民國十五年國立廣東大學正式改名為國立中山大學,並在廣州石牌建立新校址。政府遷台後,為因應社會對高等教育之需求,於民國六十八年核定設置國立中山大學籌備處於高雄西子灣,翌年七月正式建校成立,並以國父誕辰十一月十二日為校慶。

在台建校後,經首任校長李煥之篳路 籃縷,以啓山林,後經趙金祁校長、 林基源校長、劉維琪校長、張宗仁校 長及現任楊弘敦校長之經營擘劃,承 先啓後,繼往開來,發展至今為一所 具文、理、工、管理、海洋科學、社 會科學等六個學院及通識教育中心之 研究型綜合大學。 The National Kwangtung University was officially renamed the National Sun Yat-sen University (NSYSU) in 1926 and a new campus established in Shipai, Guangzhou. After the national government moved to Taiwan, approval was granted in 1979 for the NSYSU Preparatory Office to be established at Sizihwan in Kaohsiung. The university was officially opened in July of the following year with November 12, the birthday of Sun Yat-sen, set as the university's founding date.

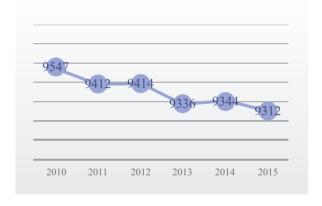
After NSYSU was established in Taiwan by Dr. Huan Lee, succeeding presidents Dr. Chin-chi Chao, Dr. Chi-yuan Lin, Dr. Victor W. Liu, Dr. Chung-cheng Chang and current president Hung-duen Yang carried on the tradition of growth and development. NSYSU is today a research university with six colleges and the center for general education.



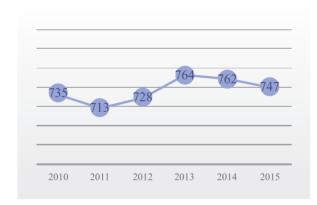
專任教師人數 Number of Full-Time Faculty Members



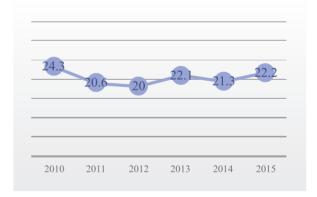
學生人數 Number of Students



行政人員人數 Number of Staff

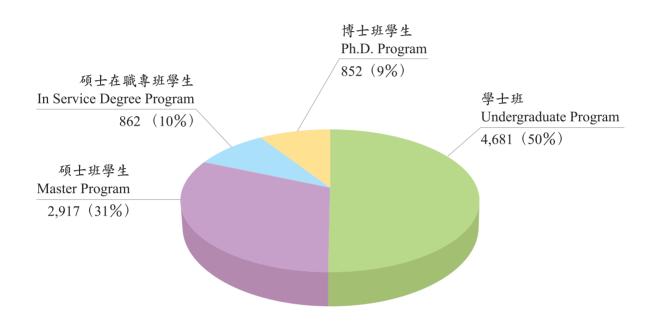


全校加權生師比 Weighted Student-Faculty Ratio

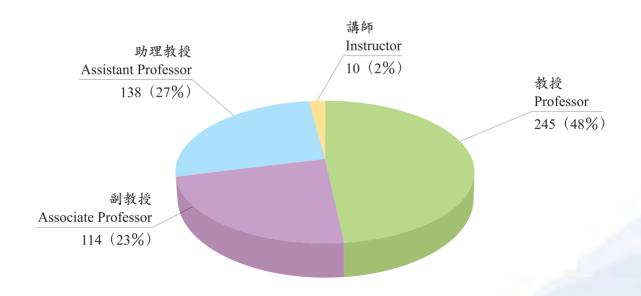




學生人數分布(104學年度) Number of Students by Degree (as of 2015 academic year)



專任教師職級分布(104學年度) Number of Full Time Faculty by Rank (as of 2015academic year)





## 學院系所總覽

學院	系 所	學士班	碩士班	博士班	碩士在職 專班
	中國文學系	•	•	•	•
	外國語文學系	•	•	•	
文學院	音樂學系	•	•		
	劇場藝術學系	•	•		
	哲學研究所		•		
	化學系	•	•	•	
	物理學系	•	•	•	
	生物科學系	•	•	•	•
理學院	應用數學系	•	•	•	
生字/沉	生物醫學研究所		•	•	
	醫學科技研究所		•		
	加速器光源與中子束應用			•	
	國際博士學位學程			•	
	電機工程學系	•	•	•	
	機械與機電工程學系	•	•	•	
	資訊工程學系	•	•	•	
	材料與光電科學學系	•	•	•	
工學院	光電工程學系	•	•	•	
	環境工程研究所		•	•	•
	通訊工程研究所		•	•	
	電機電力工程國際碩士學程		•*		
	電信工程國際碩士學位學程		•*		
	企業管理學系	•	•	•	
	資訊管理學系	•	•	•	•
	財務管理學系	•	•	•	•
	公共事務管理研究所		•	•	•
	人力資源管理研究所		•	•	•
管理學院	行銷傳播管理研究所		•		•
	國際經營管理碩士學程		•		
	人力資源管理全英語碩士學位				
	學程				
	高階經營碩士學程在職專班				•
	兩岸高階主管經營管理碩士				
	在職專班				•

學院	系 所	學士班	碩士班	博士班	碩士在職 專班
海洋科學學院	海洋生物科技暨資源學系	•	•	•	
	海洋環境及工程學系	•	•	•	
	海洋科學系	•	•	•	
	海下科技研究所		•		
	海洋事務研究所		•		
	海洋生物科技博士學位學程			•	
	政治經濟學系	•			
	社會學系	•	•		
	政治學研究所		•	•	•
	經濟學研究所		•		•
社會科學院	中國與亞太區域研究所		•	•	•
	教育研究所		•	•	•
	亞太事務英語碩士學位學程		•*		
	高階公共政策碩士學程在職				•
	專班				

<sup>\*</sup> 僅招收外國學生。



## Program Overview

College	Department / Institute	Under- graduate	Master	Ph.D.	In Service Master
	Department of Chinese Literature	•	•	•	•
College of	Department of Foreign Language and Literature	•	•	•	
Liberal Arts	Department of Music	•	•		
	Department of Theater Arts	•	•		
	Institute of Philosophy		•		
	Department of Chemistry	•	•	•	
	Department of Physics	•	•	•	
	Department of Biological	•	•	•	•
	Sciences  Department of Applied				
	Department of Applied  Mathematics	•	•	•	
College of	Institute of Biomedical				
Sciences	Sciences		•	•	
	Institute of Medical Science				
	and Technology		•		
	International Ph.D. Program for				
	Synchrotron Radiation and			•	
	Neutron Beam Applications				
	Department of Electrical				
	Engineering	•	•	•	
	Department of Mechanical				
	and Electro-Mechanical	•	•	•	
	Engineering				
	Department of Computer	•	•	•	
	Science and Engineering				
	Department of Materials	•	•	•	
Collogo of	and Optoelectronic Science Department of Photonics				
College of Engineering	Institute of Environmental	•	•	•	
Liigineening	Engineering		•	•	•
	Institute of Communications				
	Engineering		•	•	
	International Master's				
	Program in Electric Power		•*		
	Engineering				
	International Master's				
	Program in Telecommunication		•*		
	Engineering				



College	Department / Institute	Under- graduate	Master	Ph.D.	In Service Master
	Department of Business	•	•	•	
	Management				
	Department of Information	•	•	•	•
	Management Department of Finance	•			
	Institute of Public Affairs	•	•	•	
	Management	•	•	•	
	Institute of Human Resource				
	Management		•	•	•
College of	Institute of Marketing		•		•
Management	Communications				
	Master of Business				
	Administration Program in		•		
	International Business  Master of Global Human				
	Resource Management		•		
	Executive Master in				
	Business Administration				•
	Cross-Strait Executive Master of				
	Business Administration				•
	Department of Marine	•			
	Biotechnology and Resources	· ·			
	Department of Marine	•	•	•	
College of	Environment and Engineering		-	-	
College of Marine	Department of Oceanography Institute of Undersea	•	•	•	
Sciences	Technology		•		
201011000	Institute of Marine Affairs		•		
	Doctoral Degree Program in				
	Marine Biotechnology				
	Department of Political	•			
	Economy				
	Department of Sociology	•	•		
	Institute of Political Science		•	•	•
College of	Institute of Economics		•		•
Social	Institute of China and Asia- Pacific Studies		•	•	•
Sciences	Institute of Education		•	•	•
	International Master Program in				
	Asia-Pacific Affairs		•*		
	Executive Master of Public				
	Policy Program				

<sup>\*</sup> Only for international students.



## 綠色校園 Green Campus



本校於102年組團參訪美國加州大學 聖地牙哥分校(UCSD)之永續校園 規劃,以作為本校推動「綠色校園十 年計畫」之重要參考。以下分別以 「節能與智慧校園」、「安全與友善校 園」、「綠美化與建設校園」等三面 向簡要呈現近年來的努力成果。

### 節能與智慧校園

有關綠色校園最重要之節電及節水指標,99至104年六年間,中山大學節電與節水成效累計為13.49%(約可節省電費1,350萬元)與33.09%(約可節省水費330萬元),已超過行政院所訂定96年至104年之九年省電(須累計達10%)及省水目標(須累計達10%)及省水目標(須累計直10%)及省水目標(須累計直10%),顯見本校所規劃執行之節電影的能措施相當成功,104年之節電節水成效尤為歷年最佳。值得一提節形成效尤為歷年最佳。值得一提節形成效尤為歷年最佳。值得一提節形式效尤為歷年最大部校園節能計畫補助共1,832萬元,已用於建置全校性即時電能監控系統、中央空調用電需量反應控制系統以及兩座太影發電系統,成效斐然。

### 即時電能監控及能源需量反應 系統

本校於103-104年期間,8棟主要建築物新設238個數位電表與725個迴路(含整合既有電表),以即時監控全校、各館舍及各單位每日用電情形,當發生用電異常時,各單位主管可即時得知並進行處理;透過此系統分析

A NSYSU delegation visited the University of California San Diego (UCSD) to observe its sustainable campus providing a reference for our University's "Green Campus 10-Year Plan." A brief summary of our progress in recent years is provided below along the three aspects of "Energy-saving and Smart Campus", "Safe and Friendly Campus" and "Campus Landscaping."

## Energy-saving and Smart Campus

Electricity-savings and water-savings are the most important indicators in a green campus. In the 6 years between 2010 and 2015, NSYSU's electricity and water-savings amounted to 13.49% (equal to around NT\$13.5 million in electricity rates) and 33.09% (equal to around NT\$3.3 million in water rates) respectively. These exceeded the 10% in cumulative electricity-savings and 12% in cumulative water-savings over 9 vears from 2007 to 2015 set by the Executive Yuan. The results of electricity and water-savings were particularly outstanding in 2015. It is worthwhile to note that the NSYSU secured a total of NT\$18.32 million in grants from the Campus Energy Conservation Program of the Ministry of Science and Technology between 2014 and 2015. The funds were used

## NSYSU中山之后 OVER超越頂峰

### 中山大學節電與節水成效 Electricity (left, kWh) and water (right, KL) consumption in past years





各單位及各館舍每月/每季/每年的用電行為,搭配本校推動之各項節能獎勵辦法,激發全校由下(實驗室/系/所之主管)而上(校長)的方式積極參與本校節能措施之動能,以提高本校總體節電成效。此外於行政大樓、圖資大樓、逸仙館,及體育館等四棟高耗能建築物之11台中央空調冰水主機,優先設置自動需量反應系統,由總務處事先規劃校內可停電力負載區域之卸載順序,當有需求時即可立即進行中央空調冰水主機預警卸載之需量管理:甚至當超約警示發布時,該系統可自動進行中央空調主機卸載,並同步通知管理人員,以避免超約受罰。透過以上兩個系統每年共可節電約1%(可節省電費100萬元)。



to install a campus-wide real-time power monitoring system, central air-conditioning demand response control system and two solar power generation systems that have proven very effective.

## Real-time power monitoring and energy demand response system

Between 2014 and 2015, 238 new digital power meters and 725 circuits (including integration of existing power meters) were added to 8 key buildings to monitor the daily power consumption. This allowed a real time notification for each unit to proceed properly, when anomalous power consumption is detected. The system was also used to analyze the power-use behavior of each unit and each building on a monthly, quarterly and annual basis. We also installed automated demand response systems for the 11 central air-conditioning chillers of four energy- intensive buildings, that the Office of General Affairs can efficiently manage the demand on the central AC chillers. The system can even automatically decouple the central AC unit when power consumption threatens to go over the contract capacity and notify the management personnel to avoid over-contract penalties. The two systems can save around 1% (equal to NT\$1 million) in electricity each year.

#### 多功能太陽能發電系統

本校103-104年分別完成海科院停車場,及理工大樓屋頂太陽能發電系統之建置,設置容量共228kWp:所產生的電,可提供電動汽機車充電站及污水處理場等設施運用,上述2座太陽光電系統每年共可節電約1.05%(節省電費105萬元)以及減碳量為166公噸。

#### 緑色交通

102-104年在海科院設置4座電動汽車充電站及1座電動機車充電站,大排溝停車場設置1座電動機車充電站,促成高雄在地企業引進100台校園公用自行車,以提供全校教職員生免費使用,型塑綠色校園及節能減碳之形象。

#### 電子化公文系統

本校於104年9月完成全校電子化公文系統之建置,新系統導入線上簽核功能,結合電子簽章,達到公文由創稿(或收文)、會辦、簽核、發文、歸檔全面電子化作業。新系統自104年9月上線起至10月底,全校線上簽核率高達94.32%,遠超過其他大學及教育部所訂目標(公文線上簽核比率達45%以上)。



#### Multi-purpose solar power system

The solar power systems have been installed at the parking lot near the Marine Sciences building and the roof of the Science & Engineering building in 2014 and 2015 respectively. Total installed capacity is 228 kWp. The power generated supplies to the electric vehicle charging station, sewage treatment plant and other facilities. The two solar power systems save around 1.05% in electricity each year (equal to NT\$1.05 million) and reduce carbon emissions by 166 tones.

#### **Green Transport**

Four electric car charging stations and one electric scooter charging station have been installed at the College of Marine Science between 2013 and 2015. An electric scooter charging station was also installed at the Main Drain parking lot. A local business generously donated 100 bicycles to the University to engage in creating a green campus as well as reduce energy consumption and carbon emissions.

#### **Electronic Document System**

The online document management system was completed in September 2015. The system introduces E-signatures to process official document processing from drafting (or receiving), notification, approval, dispatching through to archiving. Starting from September 2015, when the system went online, to the end of October, 94.32% of all University documents were processed online, outstripping other universities and the target set by the Ministry of Education (over 45% of official documents to be processed online).

## NSYSU中山 OVER超越頂峰 UNITOP

## 安全與友善校園

本校於99-104年期間斥資上億元建設安全與友善的校園環境,重要建設包括:建置山坡地排水/邊坡地錨及防洪抽水站、更新24棟大樓火警/廣播警報系統、佈建重點區域安全監視智慧系統、汰換1萬3千公尺老舊高壓輸配電系統、建立無障礙環境(含改建46間無障礙廁所、76台無障礙電梯與2,500公尺長之無障礙扶手等)、增加4間性別友善廁所、重建220公尺西灣濱海步道、以創新人道方式處理上百隻校園流浪犬與台灣獼猴。

## 緑美化與建設校園

本校近5年來,完成西子樓與國際研究大樓2棟重要建築物之新建、10棟學生宿舍與2個台北辦公室之翻修、教職員宿舍與逸仙館防水工程、管院長廊地板與數十間公廁翻修、西子灣校門與壽山校門重建與交通改善、全校區電力與電梯設備汰舊換新、海科院邊坡地錨施作,以及校園環境綠美化等建設。

#### 西子樓校友會館

西子樓是創校以來首度以校友募款為主的工程, 且為熱情校友募款共6千餘萬元所捐贈,將文學 及藝術的元素融入校友會館的設計中,歷經一年 半的整建,在101年落成,展現美麗新貌。



### Safe and Friendly Campus

Over NT\$100 million were spent between 2010 and 2015 on building a safe and friendly campus. Major construction projects include: building slope drainage/anchoring facilities and flood prevention pumping stations, connecting the fire/PA alarm system of 24 building to the security surveillance in the duty room. Other completions include deploying smart security surveillance systems in key regions, replacing 13,000m of high-voltage transmission cables, improving handicapped access facilities, adding 4 gender-friendly toilets, rebuilding 220m beach trail, and adopting innovative, humanitarian methods to deal with stray dogs and Formosan Macaques on campus.

## Campus Development and Landscaping

In the last five years, we have completed the construction of the Alumni House and the International Research Building, refurbished ten student dormitories and two Taipei offices, carried out the water-proofing of the Staff Dormitory and Sun Yat-sen House, refurbished the College of Management Hallway and dozens of public toilets, rebuilt the security offices and made traffic improvements at the Sizihwan and Shoushan gates, upgraded all power and elevator facilities, anchored the slope next to the College of Marine Sciences, and carried out landscaping of the campus environment.

#### Alumni House

Alumni House was the first construction project since the founding of NSYSU to be funded mainly by alumni donations. More than NT\$60 million were raised for the building thanks to the enthusiastic support of NSYSU alumni. Elements of arts and literature are elegantly incorporated into the building. The 18-month refurbishment project was completed in 2012 and gave the Alumni House a delightful new look.

#### 國際研究大樓

本校國際研究大樓歷經八年終於在103年10月底完工,除提供新成立之醫學科技所、生醫所、光電系、貴儀中心、國際處、產學處等教學研究與行政單位使用外,另有2間各可容納約150人及250人之國際會議廳,及數十間研討室。此棟斥資4.18億元興建完成的4,600坪國際研究大樓空間,未來將有效連結高科技之研發成果、產業界及國際合作姐妹校之量能,發揮綜效,提升本校學術研究水準及社會貢獻度,使本校晉升國際一流大學之林。



#### 學生宿舍

學生宿舍區共有13棟建築物,本校自98年起斥資上億元陸續完成翠亨A、B、C、D、E、F、G棟宿舍及武嶺一、二、四村等共10棟學生宿舍之整修,全面提昇學生住宿品質。目前已改善的宿舍,提供新的設備、創意收納及營造簡潔學習空間。

#### 校園緑美化

近年來於校園廣植花草、佈置盆景及美化菩提樹廣場,校園綠美化有助提升教職員工之工作效率及學生學習品質。另外,自101年以來,積極將生活污廢水適當處理,澆灌於海科院周邊植栽與人行道綠廊,並且利用於廁所沖水,中水回收率達10%,綠美化之餘兼顧環保節水。

#### International Research Building

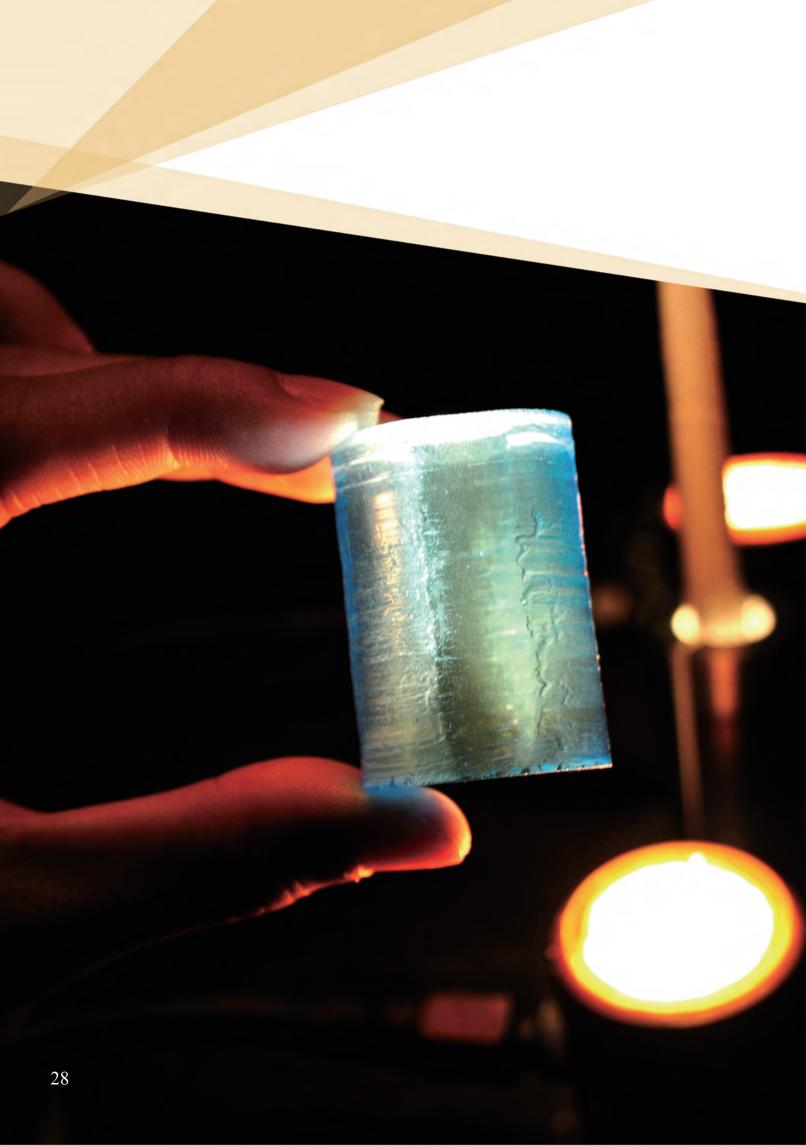
The International Research Building was finally completed at the end of October 2014. It not only hosts teaching, research and academic units including the new Institute of Medical Science and Technology, Institute of Biomedical Science, Department of Photonics, Expensive Instrument Center, Office of International Affairs and Office of Industrial Collaboration, but also boasts two conference rooms with a capacity of 150 and 250 seats as well as dozens of research offices. In the future, the International Research Building with 15,180m2 of floor space built at a cost of NT\$418 million will effectively connect and amplify the synergies from high-tech research, the industry and international sister universities.

#### **Student Dormitory**

The student dormitory area contains 13 buildings. More than NT\$100 million has been spent by NSYSU since 2009 to refurbish Tsuihang buildings A, B, C, D, E, F, and G along with Wuling Dormitory 1, 2 and 4. The refurbishing of the 10 student dormitory has enhanced the overall quality of student accommodation, offering new equipment, creative storage and learning space.

#### Campus Landscaping

We have engaged in campus greening over the years through the planting plants and placing pot plants. NSYSU has been actively promoting water-saving measures since 2012. Domestic sewage is treated and used for watering the plantings and pedestrian green corridors around the College of Marine Sciences as well as for flushing toilets within the College building. The 10% recycling rate of water contributes to the landscaping while helping to reduce water consumption.



## 學術亮點 Academic Highlights

本校近五年有多名教師獲得科技部 傑出研究獎及吳大猷先生紀念獎、 行政院傑出科技貢獻獎與教育部國 家講座、師鐸獎等重大獎項,其團 機械與機電工程學系講座教授謝曉 星(下圖左)、資訊管理學系講座教 授梁定澎(下圖右)更獲得教育部 終身榮譽國家講座殊榮;再加以其 他如發展中世界科學院士獎、中研院年輕學者著作獎以及高引用學者 等學術榮譽,考量學校規模,本校 教師在研究上的表現相當優異。 In the last five years, numerous faculty members won prestigious awards from the Ministry of Science and Technology, the Ministry of Education and the Executive Yuan. Prof. Shoushing Hsieh (bottom left) from the Department of Mechanical and Electro-Mechanical Engineering and Prof. Ting-peng Liang (bottom right) from the Department of Information Management received Lifetime National Chair Professorship, Ministry of Education. Faculty members have also been recognized as Fellow of the World Academy of Science for the Advancement of Science in Developing Countries as well as the Academia Sinica Young Investigator Award.







## 榮譽與獎項

教育部終身國家講座	謝曉星 梁定澎
教育部國家講座	黄志青
教育部學術獎	陳鎭東 翁金輅 黃志青
教育部師鐸獎	戴景賢 趙大衛
行政院傑出科技貢獻獎	周明奇 張六文
科技部傑出研究獎	黃志青 陳世哲 周明奇 高志明 鄭木海 陳年興 林煥祥 戴景賢 曾國祥 洪瑞兒
科技部吳大猷先生紀念獎	郭紹偉 朱訓鵬 吳基逞 曾韋龍 萬毓澤 紀乃文 李旻憲 林宗賢 紀志昌 陳至潔 許晉銓 王安智
中研院年輕學者著作獎	萬毓澤
傑出講座	謝曉星 梁定澎 黃志青
中山講座	翁金輅 陳鎭東 沈博彦 吳致寧 林煥祥
西灣講座	魏蓬生 陳永睿 盧展南 陳年興 周明奇
特聘教授(研究類)	楊弘敦 黃毅青 張鼎張 黃立廷 林哲信 李明逵 吳仁和 陳世哲 邱文彬 高志明 謝建台 曾銘裕 朱訓鵬 黃永茂 鄭英耀 洪子聖 陳英忠 王朝欽 戴景賢 曾韋龍 郭紹偉 羅錦興 杜立偉 簡錦松 吳慧芬 楊淑晴 洪瑞兒 曾國祥 李宗霖 李旻憲
特聘教授(教學類)	嚴成文 吳基逞 洪瑞兒 錢志回
特聘教授(產學研究類)	張鼎張 王朝欽 黃英哲 謝建台 張六文 黃義佑
特聘年輕學者	李宗錂 張 中 王家蓁 Robert Rieger 林宗賢 謝淑貞 萬毓澤 李志聰 紀乃文 張純端 溫朝凱江友中 蔡宗鳴 林淵淙 紀志昌 葉家宏 黃旭明 林伯樵 許晉銓 王安智 陳至潔 魏嘉建 郭育仁 施慶麟
榮譽講座教授	Klaus H. Ploog 彭森明 何志明 高橋涉 楊弘敦 王德威 林長壽 許榮中 Jürgen Hennig 黃正能 黃進興 廖弘源 范良士

## Honors and Awards

Lifetime National Chair Professorship, Ministry of Education	Shou-shing Hsieh , Ting-peng Liang
National Chair Professor, Ministry of Education	Jacob Chih-ching Huang
Academic Award, Ministry of Education	Chen-tung Arthur Chen , Kin-lu Wong Jacob Chih-ching Huang
Best Teacher Award, Ministry of Education	Ching-hsien Tai , David Chao
Outstanding Contributions in Science and Technology, Executive Yuan	Ming-chi Chou Liu-Wen Chang
Outstanding Research Award, Ministry of Science and Technology	Jacob Chih-ching Huang , Shyh-jer Chen Ming-chi Chou , Chih-Ming Kao Wood-Hi Cheng , Nian-shing Chen Huann-shyang Lin , Ching-hsien Tai Roy Tseng , Zuway-R Hong
Ta-Yu Wu Memorial Award, Ministry of Science and Technology	Shiao-wei Kuo , Shin-pon Ju Chi-cheng Wu , Wei-lung Tseng Poe Yu-ze Wan , Nai-wen Chi Min-hsien Lee , Tsung-hsien Lin Chi-chang Chi , Chih-chieh Chen Jim Jinn-chyuan Sheu , An-Chih Wang
Young Investigator Award, Academia Sinica	Poe Yu-ze Wan
NSYSU Distinguished Chair Professor	Shou-shing Hsieh , Ting-peng Liang Jacob Chih-ching Huang
Sun Yat-sen Chair Professor	Kin-lu Wong , Chen-tung Arthur Chen Pou-Yan Shen , Jyh-Lin Wu Huann-shyang Lin
Siwan Chair Professor	Peng-Sheng Wei , Yung-Jui Chen Chan-nan Lu , Nian-Shing Chen Ming-Chi Chou



Distinguished Professor, Research	Hung-Tung Yang , Ngai-Ching Wong Ting-Chang Chang , Li-Ting Huang Che-Hsin Lin , Ming-Kwei Lee Jen-her Wu , Shyh-jer Chen Wen-Bin Chiou , Jimmy C. M. Kao Jen-Taie Shiea , Ming-yu Tseng Shin-pon Ju , Yeong-Maw Hwang Ying-Yao Cheng , Tzyy-Sheng Horng Ying-Chung Chen , Chua-Chin Wang Ching-hsien Tai , Wei-lung Tseng Shiao-wei Kuo , Ching-Hsing Luo Li-Wei Tu , Chin-Sung Chien Hui-fen Wu , Shu-Ching Yang Zuway-R Hong , Roy Tseng Chon-Lin Lee , Min-hsien Lee
Distinguished Professor , Teaching	C.W. Yen , Chi-Cheng Wu Zuway-R Hong , Chi-Hui Chien
Distinguished Professor, Industry-Academy Research	Ting-Chang Chang , Chua-Chin Wang Ing-Jer Huang , Jen-Taie Shiea Liu-Wen Chang , I-Yu Huang
Distinguished Junior Research Scholar	Tsung-Lin Lee , Chung Chang Chia-Chen Wang , Robert Rieger Tsung-hsien Lin , Shuchen Hsieh Poe Yu-ze Wan , Jyh-Tsung Lee Nai-wen Chi , Chun-Tuan Chang Chao-Kai Wen , Yu-Chung Chiang Tsung-Ming Tsai , Yuan-Chung Lin Chi-chang Chi , Chia-Hung Yeh Shiu-Ming Huang , Po-Chiao Lin Jim Jinn-Chyuan Sheu , An-Chih Wang Titus Chih-Chieh Cheng , Chia-Chien Wei Yujen Kuo , Ching-Lin Shih
Emeritus Chair Professor	Klaus H. Ploog , Samuel Peng Chih-Ming Ho , Wataru Takahashi Hung-Tung Yang , David Der-wei Wang Chang-Shou Lin , John R-C. Hsu Jürgen Hennig , Jenq-Neng Hwang Chin-shing Huang , Mark Liao Liang-Shih Fan

## 國際合作研究

本校積極提升國際學術地位、媒合國際合作計畫、推動跨國研究中心、延攬跨國傑出人才。在教師規模有限的情況下,國際合作研究均有顯著的成長。國際合作論文篇數從2010年243篇增加至2014年的321篇,成長32%。國際合作計畫件數自2011年起皆維持每年至少通過15件。

## 與標竿學校合作交流

本校選定加州大學聖地牙哥分校(UCSD)作為標竿學校,99年本校首度組團赴該校觀摩參訪,並研商未來之國際合作計畫,包含大師講座、合作研究及學生交流等。兩校於100年簽訂包含海洋科學、工程及社會科學三個領域的學術合作備忘錄,並於101年5月在本校舉辦第一次雙邊研討會,兩校共有66位學者共同參與,就雙方近年發展之研究主題與計畫研討,促進兩校學者交流,推動更緊密的合作。

## 山海論壇

為推動本校與廣州中山大學及廈門大學 三校之間的學術交流,開拓兩岸校際合 作,100年底本校舉辦「第一屆山海論壇」 研討會,三校推派頂尖學者參與發表研 討。為延續跨校、跨領域的合作,三校 協議每年輪流辦理,至今已舉辦五屆, 研究範圍擴及海洋領域、經濟、管理、 材料化學、物理能源、生物醫藥與醫曆 器械、兩岸研究、高等教育研究、文學 與文化、數學與科學計算等十大領域, 也奠定學術世代交流的堅實基礎。

## International Research Collaboration

NSYSU actively supports joint international research projects, research centers and researchers. International cooperation has grown significantly despite our limited faculty size. The number of joint international papers have grown 32% from 243 in 2010 to 321 in 2014.

### Cooperation and exchange with benchmark universities

The University of California San Diego (UCSD) was set as the benchmark university by NSYSU. In 2010, a NSYSU delegation visited UCSD for the first time and held talks on future international cooperation including master lectures, research partnerships and student exchanges. In 2011, the two universities signed a memorandum of understanding on academic collaboration in the three fields of marine sciences, engineering, and social sciences. The first joint symposium was held in May, 2012, and was attended by 66 academics from both universities. The symposium looked at the research topics and projects from both sides in recent years to promote bilateral academic exchange and closer cooperation.

### Shan Hai Forum

To promote academic exchanges between the NSYSU, the Sun Yat-sen University in Guangzhou and Xiamen University as well as pave the way for cross-strait inter-university cooperation, the NSYSU hosted the "1st Shan Hai Forum" at the end of 2011. Top scholars from the three universities took part in the forum presentations and discussions. The three universities agreed to host the forum on a rotating basis each year to maintain the inter-university and inter-disciplinary cooperation. The Forum is now being held for the 5th time and it now encompasses ten fields including marine sciences, economics, management, material chemistry, physics and energy, biomedical science and medical devices, cross-strait research, tertiary education research, literature and culture, mathematics and scientific computing. The "Shan Hai Forum" pioneered the inter-university forum format between the three universities and laid down a solid foundation for future academic exchanges.

# NSYSU中山<sup>35</sup> OVER超越頂峰

## 頂尖研究中心

#### 亞太海洋研究中心

本校與科技部、内政部合作建置「東 沙國際海洋研究中心」於103年11月 正式啓用,備有研究艇、實驗室、海 洋探測儀器等,並有長期駐島人員專 職協助各項研究之進行,完備東沙海 洋研究環境,改善南海海洋研究場 域。本中心為我國海洋天然藥物研究 重鎮,海下所王兆璋、陳信宏與海科 系洪慶章教授率海下科技能源研究團 隊,全國首度成功點燃海底甲烷氣, 為我國能源發展新突破。在全球碳循 環研究方面,陳鎮東講座教授戮力於 全球二氧化碳研究,三度獲得科技部 傑出研究獎,並獲教育部第54屆學術 獎。海洋化學領域之實質研究成果更 已超越亞洲主要大學(如日本東京大 學)。

### Elite Research Centers

#### Asia-Pacific Ocean Research Center

The "Dongsha Atoll Research Center" was jointly established by the NSYSU, Ministry of Science and Technology (MOST) as well as the Ministry of the Interior in November, 2014. The research station is equipped with research boats, lab, and marine surveying equipment. Personnel are also stationed on the island to support research activities, improve the marine research environment on Dongsha Atoll, and upgrade the South Sea research facilities. The Asia-Pacific Research Center is an important bastion for research into natural marine pharmaceuticals in Taiwan. The energy research team led by Prof. Chau-chang Wang and Prof. Hsin-hung Chen from the Institute of Undersea Technology, and Prof. Chinchang Hung from the Department of Oceanography was the first to successfully ignite undersea methane gas in Taiwan, a breakthrough for local energy research. In the field of global carbon cycle research, Chair Prof. Cheng-dong Chen has won the award for outstanding research from the MOST on three occasions as well as the 54th Academic Achievement Award from the Ministry of Education (MOE). NSYSU has now outstripped other leading Asian universities (including the Tokyo University in Japan) in the field of marine chemistry.



### 電子商務與網路社會研究中心

本中心為台灣電子商務與網路社會之研 究重鎭,教育部「邁向頂尖大學計畫」 中,中南部地區唯一的人文社會領域研 究中心。在電子商務頂尖期刊,2009-2013年IJEC發表2篇,在ECRA發表6 篇,合計排名世界第3,研究不但是國 内第一,亦在國際間位居領先地位。本 中心除持續維護NeGoGo團購系統、 iVoter電子化民主實驗室及e-culture文 創平台等教學與研究實習平台,102年 開發電子書櫃系統,103年開發築夢灣 一網路創業平台,提供創新創業相關經 驗。此外,與政大心腦中心合作網路行 為的腦神經研究,為目前在此領域的領 導者,梁定澎講座教授並負責為 **«Journal of Management Information** Systems》(資管領域前3名的頂尖期刊) 主編Neuro Information Systems的第1 個學術期刊的專刊。

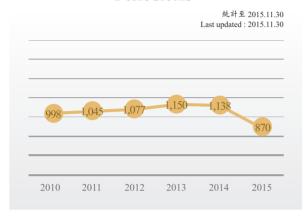
### Electronic Commerce and Internet Society Research Center

The Center is an important bastion for research into e-commerce and the Internet society in Taiwan. It is also the only humanities-related research center in central and southern Taiwan under the MOE's "Aim for the Top University Plan". Between 2009 - 2013, the Center published two papers in IJEC and 6 papers in ECRA so it is ranked No.3 in the world. The Center is not only a local leader in research but is among the international leaders as well. Apart from maintaining teaching and research platforms such as the NeGoGo group buy system, the iVoter e-democracy lab and e-culture cultural creativity platform, the center also developed an electronic bookcase system in 201 as well as the iDream online start-up platform to provide start-up related experience. The research partnership with the Center for Mind, Brain and Learning at National Chengchi University into neural science and network behavior is currently the leader in the field. Chair Prof. Ting-peng Liang was also nominated as the chief editor by the Journal of Management Information Systems (one of the top 3 periodicals in information management) for the first academic journal on Neuro Information Systems.

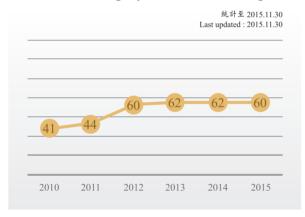


### NSYSU中山35" OVER超越頂峰

### 國際期刊論文數 Papers Published in International Periodicals



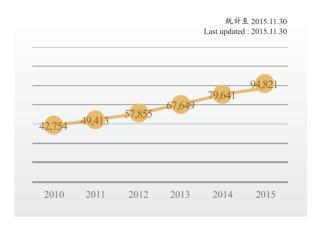
### 高被引用率(HiCi)論文數 Number of Highly Cited (HiCi) Papers



### 國際合作論文篇數 Number of joint international papers



### 論文被引用數 Number of Papers Cited

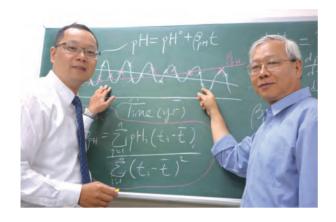


### 論文H指數 H-Index of University Papers



### 國際合作計畫件數 Number of Joint International Projects





### 論文發表質量穩定成長

本校近五年學術研究績效,除論文發表量保持穩定成長之外,論文「質」的方面,表現十分亮眼。國際期刊論文(SCI、SSCI、AHCI)發表數目,2010年至2014年成長14%;論文總被引用數自42,754次攀升至79,641次,大幅成長86%;論文受高度引用率HiCi之篇數,成長51%;全校論文H指數成長38%。

本校雖為一中型規模大學,仍致力各學術領域之發展。2006年只有七大領域進入ESI資料庫中,2015年已有藥理及毒物學、化學、數學、工程、材料科學、社會科學、臨床醫學、植物與動物科學、電腦科學及全領域等十大領域進入ESI資料庫中全球前1%之列,領域數僅次於台大、成大及中興,居全國第4。如考量學校規模及教師人數,則本校表現極為亮眼,尤其在數學領域,平均每篇論文被引用數為7.68次,居世界第29名,非常優異。

### Steady Growth in Research Quality

Both quality and quantity of NSYSU's research output have grown steadily in the last five years. Between 2010 and 2014 the number of SCI, SSCI and AHCI publications grew by 14%. The number of citations also grew by 86% from 42,754 to 79,641. The number of highly cited (HiCi) papers grew by 51% and the H-Index of NSYSU papers increased by 38%.

Though we are a medium-size university, we are very much committed to the development of all fields of academic endeavor. In 2006, only seven fields entered the ESI database. By 2015 we have ten fields among the global top 1% in the ESI database: pharmacology & toxicology, chemistry, mathematics, engineering, material science, social science, clinical medicine, plant and animal science, computer science and all fields, making NSYSU second only to National Taiwan University, National Cheng Kung University, and National Chung Hsing University in Taiwan. Our performance is all the more outstanding if the size of our university and faculty is taken into account. Mathematics papers in particular were cited 7.68 times on average, placing us 29th in the world.

# NSYSU中山<sup>35</sup> OVER超越頂峰

### 研究亮點

### iPad也行 失語症溝通輔助系統

本校新創公司LIORS團隊針對失語症病友設計科技輔具:語言復健溝通練習系統「Rephasia」,由專業語言治療師參與設計題庫,透過系統指令,可要求患者說出聽到的句子、辨認指令物品、寫出指令文字、說出指令物品等等,除了連線操作,更可下載至iPad隨身練習,訓練結果數據更可存檔進行統計分析,直接回傳給語言治療師作為治療參考,大幅縮短復健時間與提升訓練成效,獲得國外創投公司注意。

### 雙摻雜閃爍晶體 帶動生醫科技發展

材光系周明奇教授帶領團隊成立全國晶體成長中心,整合國内北中南尖端晶體成長技術,研發各種特殊光電醫學用單晶,並開發數種不同材料與尺寸之晶體生長技術,廣泛應用於雷射二極體及LED等各種科技產品。閃爍晶體(scintillator)為放射醫學影像設備正子斷層顯影術之成像探頭關鍵組件,可偵測癌細胞及腦部病變。周明奇教授利用柴式提拉法成功生長出雙摻雜閃爍晶體,補足需仰賴進口的尖端資源,國內正子斷層顯影設備公司可整合上游晶體原料,帶動國內生醫科技發展。

#### 大氣質譜儀3秒快篩 把關民衆食安

化學系謝建台教授實驗室開發「大氣質譜儀」,3秒即可快速完成篩檢分析食安,為食品安全作第一線的把關。目前市面上的食品檢測方法,需進行許多樣品前置處理步驟,一旦食安事件爆發,待測樣品暴增,往往來不及因應檢測。「大氣質譜儀」不需進行前置處理步驟,無論固態或液態樣品,不受樣品大小、形狀及材質的限制,短短3秒鐘即可快速篩選食品中各式大小分析物的質譜訊號。殘留農藥、防腐劑、塑化劑及混合食油品,皆無所遁形,還可應用於環境污染及醫學檢測領域。

### Research Highlights

### Rephasia for the iPad

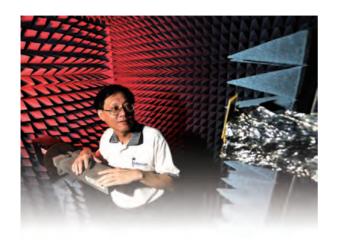
The LIORS team developed Rephasia as a tool for treating aphasia. Using a database of questions designed by therapists, the system directs the patient to repeat phrases, identify objects and write words. The system can run online or be downloaded as an iPad app. The results can be analyzed and transmitted to the speech therapist for reference, greatly shortening recovery time and improving training performance. Foreign venture capital have expressed their interest.

### Double Doped Scintillator Driving the Development of Biomedical Science

The research team led by Prof. Chou Ming-Chi from the Department of Materials and Optoelectronic Science integrated cutting-edge crystal growth techniques from throughout Taiwan to study special optoelectronics mono-crystals for medical use. The crystal growth techniques for different materials and sizes developed by the team has widespread applications in laser diodes and LED technology/products. The scintillator is a critical probe component in Positron Emission Tomography (PET) to detect cancer cells and pathological changes in the brain. Prof. Ming-chi Chou success in growing doubly doubled scintillators using the Czochralski helped reduce dependence on imports while also driving the domestic development of biomedical technology through domestic PET equipment makers.

### Ambient Ionization Mass Spectrometry for Food Safety

"Ambient Ionization Mass Spectrometry" (AIMS) developed by Prof. Jentaie Shiea from the Department of Chemistry provides a 3-second screening process for food safety. Current food safety tests require time-consuming pre-processing that is too slow during food safety scares. AIMS requires can be quickly analyze the spectrum signature of raw samples in just 3 seconds regardless of state, size, shape or material. Agricultural chemical residue, preservatives, emulsifiers and blended cooking oils can all be identified immediately. Other applications include environmental pollution and medical testing.



### 電路天線應用於未來5G行動裝置

電機系翁金輅教授天線實驗室開發寬頻及多頻之接地面天線技術,配合使用被動式切換匹配電路設計,將傳統以天線元件之結構設計,轉為以電路設計控制天線操作,改變目前終端通訊裝置之4G天線設計,使天線尺寸大幅縮小,並具有雙寬頻帶之操作特性。電路天線技術可應用於4G、未來5G行動通訊大規模多天線系統建置,增加行動通訊之通道傳送速率。在智財產出及技術轉移上,提升台灣行動通訊天線設計技術深具貢獻。

### Made in Taiwan 水下無人遙控載具

海下科技研究所王兆璋及陳信宏教授實驗室,開發台灣首座水下無人遙控載具,整套儀器零件自製率高達90%以上,可應用在海洋能源、國防、漁業、水下管路施工、救難搜尋、海洋環境等廣大領域。本校提供關鍵技術,結合台灣精密機械加工產業,透過產業鏈提昇螺絲工業之製程能力,將傳統產業轉型為海洋科儀設備研發製造商,供應內銷市場及爭取外銷訂單

#### 金屬玻璃應用 生醫植入骨材

非晶質金屬(Amorphous alloys)或稱金屬玻璃(Metallic glasses),應用廣泛,材光系黃志青教授研發10種以上之金屬玻璃塊材(BMG),其中無銅或低銅鈦基玻璃金屬,與純鈦金屬相比具有良好之生物相容性,且其細胞毒性極低。BMG 材料之電化學活性、生物腐蝕特性經高雄醫學大學骨科部陳崇桓主任進行生物測試,並建立相關活體實驗之操作及取樣標準程序,研究成果獲得多項專利並發表數篇優質之生物材料期刊論文MSE-C。

#### Antennae for Future 5G Mobile Devices

The NSYSU Antenna Lab led by Prof. Kin-lu Wong developed a circuit-defined antenna design that greatly reduces the size of current 4G antenna designs and adds dual-band capability. The circuit-defined antenna technology can be used 4G and future 5G mobile communications to increase transfer rates. The creation of intellectual property and technology transfers represent a major contribution to mobile antenna design in Taiwan.

### An Underwater Remotely Operated Vehicle Made in Taiwan

Prof. Chao-chang Wang and Prof. Hsin-hung Chen at Institute of Undersea Technology have developed Taiwan very own underwater remotely operated vehicle. Over 90% of the parts are locally made and applications include marine energy, defense, fishery, underwater pipeline construction, search and rescue, and marine environment. NSYSU technologies and Taiwan's precision machining industry combined to improve screw manufacturing processes, turning a traditional industry into marine instrument R&D and manufacturing company that supplies both the domestic and export markets.

#### Metallic Glass for Bone Implants

Amorphous alloys or metallic glasses have many applications. Prof. Jacob Chih-ching Huang from the Department of Materials and Optoelectronic Science has developed more than 10 types of bulk metallic glasses (BMG), some of which have better bio-compatibility than pure titanium and also extremely low cell toxicity. The electrochemical and bio-corrosion properties of the BMG materials were tested by Director Chung-hwan Chen from the KMU Department of Orthopaedic Surgery to establish the animal testing and sampling procedures. The research led to a number of patents and several quality papers on biomaterials published in MSE-C.

### NSYSU中山35" OVER超越頂峰 THE TOP

### 手術無影燈、LED紫外光源 效能提升

機電系林哲信教授研發「抗菌及高反射之LED手術 燈」,利用LED燈源結合能量守恆原理,透過自由 曲面及橢圓曲線進行設計。在少數的LED光源下, 使20 watt功率下之光線以不同角度發射至目標平 面達到無影之效果。燈具利用金屬玻璃薄膜取代純 金屬作為反射層,以達到濾紅外光與抗菌之效果, 降低患處之溫度升高造成病變及病菌感染的產生。

#### 智能型針療 生醫裝置開發

機電系潘正堂教授研發智能型電控針療裝置一「抗菌可電控針療裝置開發」,循傳統採血裝置,整合機構設計及電磁電路,握把處使用結合鈦鋯矽摻雜 微量銀的金屬玻璃薄膜,使裝置具備抗菌以及高耐磨能力,可連續性的控制出針頻率與力道,大幅縮短療程時間、降低醫療人員職業傷害及防止病患二次感染。

### 鄉民政治新紀元 網路世界的民主實驗

政治所「iVoter民主培力計畫」建立一個民意代表與民衆參與、互動的網路平臺,提供「鄉民」充足政治資訊,並藉以培育良好的網路民主素養。2012年初次上線,iVoter網站即有超過四萬人次瀏覽、95位立委參選人積極投入議題立場測驗。2013年開始,團隊與十數位區域立委合作舉辦線上公民會議,立委與網友線上面對面討論,在網路世界進行政治溝通和建立監督機制。此外,iVoter也進行跨國比較,與日韓團隊共同出版中英文專書一《網路民主:台灣iVoter投票網站建置紀實》、Political Behavior and Technology: Voting Advice Applications in East Asia,將由Palgrave Macmillan 出版。



### Enhanced Surgical Shadowless Lamp and LED UV Lamp

The "Antibacterial and High-Reflectivity LED Surgical Lamp" developed by Prof. Che-hsin Lin from the Department of Mechanical and Electro-Mechanical Engineering combines LED lamps, the law of conservation of energy, free curves and plane curves. A small number of LED lamps creates rays that reach the target plane from different angles to achieve a shadowless effect. A metallic glass film is used instead of pure metal as the reflective layer to achieve a IR filter and anti-bacterial effect, reducing pathological changes and bacterial infections caused by heating of the surgical site.

#### **Smart Acupuncture**

Prof. Cheng-tang Pan from the Department of Mechanical and Electro-Mechanical Engineering developed a smart acupuncture device based on conventional blood sampling technology. The handle uses a special metallic glass film to achieve bacterial and abrasion resistance. The device can control the needle force and frequency to greatly shorten the treatment time, avoiding occupational injury for medical personnel and secondary infections to the patient.

#### "iVoter" Experiment in Online Democracy

The "iVoter" project of the Institute of Political Science built an online platform where elected representatives and the general public can participate and interact with each other. When first launched in 2012, the iVoter website was visited by more than 40,000 people and 95 Legislative Yuan candidates took part in the tests on political issues. In 2013, the team worked with over a dozen legislators to set up online citizen conferences for political communication and oversight. An international comparison was also conducted by iVoter in cooperation with Japanese and Korean research teams, and the results published in Chinese and English. Online



### 陸拾陸小客廳 社區文創興業

高雄市哨船頭為南台灣開墾史的入口港岸,坐擁豐富的歷史人文與生態景觀。劇藝系「陸拾陸小客廳」以中山大學鄰近的哨船頭社區為基地,「親近」、「找到」說出社區故事。師生和社區搭建興業平台,共同開發哨船頭特色生活文創,並推動社區微型創業。藉由實際參與、互相討論,讓學生不再只是從書中了解哨船頭地區文化,更從實務中體會與感受文化傳承之重要性,創造新的價值。

### 開創非營利組織的社會溝通能力—社會網絡募資整合平台

有鑑於非營利組織(Non-Profit Organization)需要各種資源支持才能長期進行社會服務,本校育成中心廠商提供「NPO channel」公益募款平台,創造全新的捐款模式,以企業經營方式建構公益募款平台。將各NPO在專屬平台以頻道方式呈現NPO資訊及募款計畫,並發展NPO APP串接平台資訊,以網路行銷概念推廣公益。捐款方式多元且便利化後,公益行為簡單化,持續擴大感動並分享社會大衆。在營運模式、外部資源、社會企業等方面持續精進強化,以建立台灣最便利的公益募款平台的品牌形象為目標。

Democracy: Building the iVoter Website in Taiwan and Political Behavior and Technology: Voting Advice Applications in East Asia will be published by Palgrave Macmillan.

#### Community Building: South Talk

Kaohsiung City's Shaochuantou was where the settlement of Taiwan began and is rich in both history, culture and ecology. Department of Theater Arts "South Talk" used the Shaochuantou Community next to NSYSU to identify and narrate the stories of the community. The teachers, students and community created a joint platform to joint develop the cultural character of Shaochuantou and support community-based micro-enterprises. Through hands-on experience and mutual discussion, students are no longer limited to learning about Shaochuantou's culture from books. They can also appreciate for themselves the importance of cultural heritage and innovation.

### Helping NPOs Communicate with Society

Non-Profit Organizations need support to provide long-term social service. NSYSU Incubation Center companies therefore set up the "NPO Channel" charity fund-raising platform create an all new fund-raising model. The information and fund-raising plan of each NPO is presented through a dedicated channel. An NPO app linked to the platform was also developed to exploit online marketing. By simplifying donation methods, it becomes easier to support charities and reach out to the community. Further improvements to the business model, external resources and social enterprise aspects will strive to build the most convenient charity fund-raising platform brand in Taiwan.



# 專業教育 Professional Education

為促進教學與研究並因應社會發展需求,本校近5年共新增、整併11個系所,範圍涵蓋醫學科技、電信工程、管理、社會科學、教育等領域,持續發展系所特色,提升學術品質與能量。

NSYSU has added or consolidated 11 faculties in fields such as medical technology, telecommunications engineering, management, social science and education over the last five years to enhance teaching and research. Specialization is encouraged to boost academic quality and capability.





# 中山 超越頂峰

### 近五年新增/整併系所

### 99 學年度 社會學系(學士班、碩士班)

### 100 學年度 兩岸高階主管經營管理碩士在職專班

### 101 學年度 加速器光源及中子束應用博士學位國 際學程

### 102 學年度

人力資源管理全英語碩士學位學程 亞太事務英語碩士學位學程(招收外 籍生)

海洋科學系(學士班、碩士班、博士 班)

#### 103 學年度

醫學科技研究所(碩士班) 電信工程國際碩士學位學程(招收外 籍生)

教育研究所碩士在職專班 企業管理學系增設醫務管理碩士班

#### 104 學年度

中國與亞太區域研究所碩士在職專班

### New Programs, Academic Year 2010-2014

#### Academic year 2010:

Department of Sociology (Undergraduate, Master program)

#### Academic year 2011:

Cross-Strait Executive Master of Business Administration

#### Academic year 2012:

International Ph.D. Program for Synchrotron Radiation and Neutron Beam Applications

#### Academic year 2012:

Master of Global Human Resource Management International Master Program in Asia-Pacific Affairs (open to international students) Department of Oceanography (Undergraduate program, Master program, Ph.D. program)

#### Academic year 2014:

Institute of Medical Science and Technology
(Master program)
International Master's Program in
Telecommunications Engineering
(open to international students)
Institute of Education - In Service Master program
Master program of Health Care Management
added to Department of Business Management

#### Academic year 2015

Institute of China and Asia-Pacific Studies - In Service Master Program

### 跨系人文特色領域課程

### 跨文化美學學程

整合文學院、中文系、外文系、音樂系、劇藝系、哲學所、通識教育中心所有美學相關課程,一方面包融中國與西洋各式美學課程,體現跨文化的特色;另一特色則跨越系所專業界線,培養學生敏銳的賞析能力,回應當代人文精神的根本需求,達到培育學生跨文化美學涵養之目的。

### 文化創意產業動漫學程

與業界合作,規劃課程、參訪與實習,提供各院學生接觸文化創意產業之機會。培養具備技術知識、 藝術與美學基礎與說故事能力的設計與管理人才, 以因應文化創意產業廣大的市場需求。

### 人文情境教室課程

由三面活動投影布幕、鏡牆,運用虛擬實境、場景設定,突破傳統講授式上課方式。「數位跨界的情境向度」、「數位音樂的創意世界」、「西洋古典人文情境」、「閱讀人生」、「音樂與詮釋」、「劇場與創意」、「新媒體與社會」等課程皆以人文情境融入教室。以人文精神與藝術涵養的課程內容,培育學生擴展人生視野與生命成長。

### Multi-Disciplinary Humanities Courses

### Trans-cultural Aesthetics Curriculum

The curriculum combines the aesthetics-related courses from the College of Liberal Arts, Department of Chinese Literature, Department of Foreign Languages & Literature, Department of Music, Department of Theater Arts, Department of Philosophy, and the Center for General Education to hone students' ability to appreciate the aesthetics of different cultures.

#### **Animation and Comics Curriculum**

The courses, tours and practicum developed with industry cooperation expose students from different colleges to the cultural and creative industries. Design and management expertise are cultivated to meet the growing demand from the cultural and creative industries.

#### Situation Classroom Courses

Virtual reality and scenarios are presented via three portable projection screens and a mirror wall. Courses such as "Scenario Dimensions of Digital Crossover", "Genesis of Digital Music", "The Classical Era of the West", "Reading Life", "Music and Interpretation", "Theater & Creativity", "New Media and Society" expand students' horizons and enrich their lives.



# 中山 超越頂峰

### 頂新人文藝術中心「余光中人文講座」系 列活動

102年8月成立頂新人文藝術中心,推廣人文活動、增進人文教育並掌握國際脈動,在余光中教授的策畫帶領下,已邀請李安導演、金耀基院士、王安憶作家、姚仁喜建築師、楊世彭導演、王心心南管名家及黃春明作家等人蒞校對談。每年推出「余光中人文講座」及相關藝文展演、數位典藏、成果發表、研討會議、專書出版等活動。

### 國際化專業課程

#### 持續開設全英語課程及學程

103學年度開設全英語課程共計326門課(佔總課程數8.3%)較102學年度增加12%,其中學士班103門、研究所223門。101學年度設置「加速器光源與中子束應用國際博士學位學程」、102學年度增設「亞太事務全英語碩士學位學程」及「人力資源管理全英語碩士學位學程」、103學年度增設「電信工程國際碩士學位學程」;103學年度已有6個全英語學位學程,除強化英語授課課程能量外,亦作為招收外籍學位生之基礎學程。



### "Yu Kwang-chung Humanities Forum" at the Ting Hsin Center for Arts and Humanities

The Ting Hsin Center for Arts and Humanities was established in August 2013 to promote the humanities and track international trends. Under the guidance of Prof. Kwang-chung Yu, director Lee Ang, Academia Sinica Fellow Ambrose King, author Anyi Wang, architect Kris Yao, director Daniel S P Yang, nanguan musician Xin Xin Wang, and writer Chunming Huang were invited to take part in NSYSU fora. The "Yu Kwang-chung Humanities Forum" as well as related performances, digital collections, presentations, symposiums and book publications are organized every year.

### International Professional Courses

#### New English Courses and Curriculums

A total of 326 English courses (8.3% of all courses) and an increase of 12% over last academic year including 103 undergraduate and 223 master courses were offered in academic year 2014. From 2012 to 2014, several international graduate programs were created that are taught in English. The international graduate programs include the International Ph.D. Program for Synchrotron Radiation and Neutron Beam Applications, International Master Program in Asia-Pacific Affairs, Master of Global Human Resource Management, and International Master's Program in Telecommunication Engineering. Six English degree programs were offered in 2014 to not only strengthen our English instruction capability but also provide a basis for enrolling overseas students.

### 院系所課程通過國際認證

電機系及機電系103年通過IEET第2週期性認證,管理學院於104年再度通過國際商管學院促進協會(AACSB)國際學術認證,此外管理學院人力資源管理研究所通過國家級人才發展品質評核(Taiwan TrainQuali System, TTQS)認證(103年12月),財務管理學系碩士班課程通過美國CFA機構(特許財務分析師)認證(101年5月)。

#### 增設短期出國研修課程

鼓勵教師開設短期出國課程,增加學生出國學習管道,例如電機系前往美國南加大、企管系醫管碩士班至美國密西根大學、海洋環境及工程學系前往美國德州農工大學、政經系前往韓國外國語大學等,引導學生出國學習意願及拓展國際視野。

### 提升學生英文能力

100年成立「英語文教學中心」,並於100學年度 起實施英文能力標準認證(英文畢業門檻),以促 進學生繼續學習英文,取得相關證照,有利未來 升學就業。自103學年度起,全面推動英文能力 基礎能力檢測機制,自大一新生入學後開始施測 並逐年追蹤,作為學生學習成效的客觀佐證資 料,回饋至課程與教學內容。





### Internationally Accredited Courses

The Department of Electrical Engineering and the Department of Mechanical and Electromechanical Engineering passed their 2nd IEET periodic review in academic year 2014. The College of Management was re-accredited by the AACSB in academic year 2015. The Institute of Human Resource Management has achieved the Taiwan Train Quali System (TTQS) accreditation (December 2014) while the Master program of the Department of Finance has been accredited by the CFA Institute in the U.S. (May 2012).

#### Addition of Short-Term Overseas Courses

Faculty members are encouraged to offer short-term overseas courses to students. The Department of Electrical Engineering and the University of Southern California, the Health Care Management Master program and University of Michigan, the Department of Marine Environment and Engineering and Texas A&M University, or the Department of Political Economy and the Hankuk University of Foreign Studies all provide students with guidance on studying abroad.

### Improving Students' English Proficiency

In 2011 the English Teaching Center was established and English proficiency certification made a requirement for graduation. From 2014 onwards, the English language proficiency of students are assessed upon enrollment and annually in order to gauge learning results and assist in course development.

# 中山超越頂峰

### 社區營造實地課程

### 人文創新與社會實踐課程

以「在社區興業」為導向,從發展社區文化認知,並經由文創商品與服務的設計進入社區,與社區共同策劃執行興業方案。課程以鼓山區哨船頭社區發展協會為實習平台組織,專業課程與田野調查交織進行,以歷史與生活文本編輯產出,學習社區認知的發展,並邀請社區微型業者,學生分組進行個別事業發展興業策略。

### 推動新制服務學習課程

101學年度起實施新制服務學習課程,以學生所學之專業為主體,進行服務課程之學習。結合高雄市各社教單位、各級學校與一般商家,如壽山動物園、圖書館、美術館、文化中心、哈瑪星打狗會社等組織,提供弱勢學童關懷及課輔服務、壽山植物生態導覽、動物園生態導覽、柴山獼猴生態解說、日常生活物理演示、海生館導覽、鹽埕區商家網路行銷等服務。

### 川海特色體育教學

本校得天獨厚的地理優勢,積極推廣水域活動,開設潛水、帆船及水中救生等課程。每年舉辦游泳大會考,讓學生具備基本游泳能力與水上運動安全知識;鼓勵並輔導學生取得運動證照,擴展多元的休閒運動領域。也持續推廣水上戶外休憩活動,使學生親近海洋,進一步了解海洋生態環境。



### Community Building Courses

### Humanities Innovation and Social Practice

The concept of "Community Enterprise" is used to guide the development of the community cultural identity. Cultural & creative merchandise and services are introduced to develop community enterprises. The course uses the Shaochuantou Community Development Association as a platform for both professional teaching and field studies. History and culture is used to study the development of the community identity, while student teams develop business strategies for local micro-enterprises.

### New Service Learning Course

The new service learning course introduced in 2012 focuses on student specializations. Social education units, schools and merchants in Kaohsiung City such as Shoushan Zoo, libraries, art galleries, cultural centers and the Hamasen-Takao Association provided a platform for mentoring services, guided tours, physics demonstrations and online marketing services for local merchants.

#### Unique Physical Education

NSYSU's location means we offer diving, sailing and water rescue courses to promote aquatic activities. A swimming carnival is held every year to teach every student how to swim and basic water sports safety. Students are encouraged to achieve sports certification. We also continue to promote outdoor water activities to familiarize students with the marine environment.

### 發展新一代教學模式

#### 數位學習課程

本校已成立「新一代數位學習規劃與推動委員會」,專責指導數位學習發展,並鼓勵教師投入數位教學。103年獲教育部補助3門磨課師課程(MOOCs),並有8門數位課程、2門數位教材通過教育部認證審查,課程內容涵蓋電子商務、服務科學、工程與管理、應用程式設計、資料庫系統等。此外也辦理教育部高中三年級學生線上增能學習方案與磨課師課程推動計畫(103年),共計獲得5門課程補助。



### 推動總結性課程與專業實務課程模組

自102年起推動總結性課程與專業實務課程模組, 強調創新教學、實務導向、產業參與、課程品保等 四個要素,在課程中涵蓋基本實務操作能力以及一 定程度的專業學術探討能力,落實學用合一。102-103年共計15個學系執行總結性課程計畫、8個研 究所執行專業實務能力強化課程計畫、2個學程執 行跨領域職能導向課程計畫、2個研究所執行強化 工業基礎技術課程模組計畫。

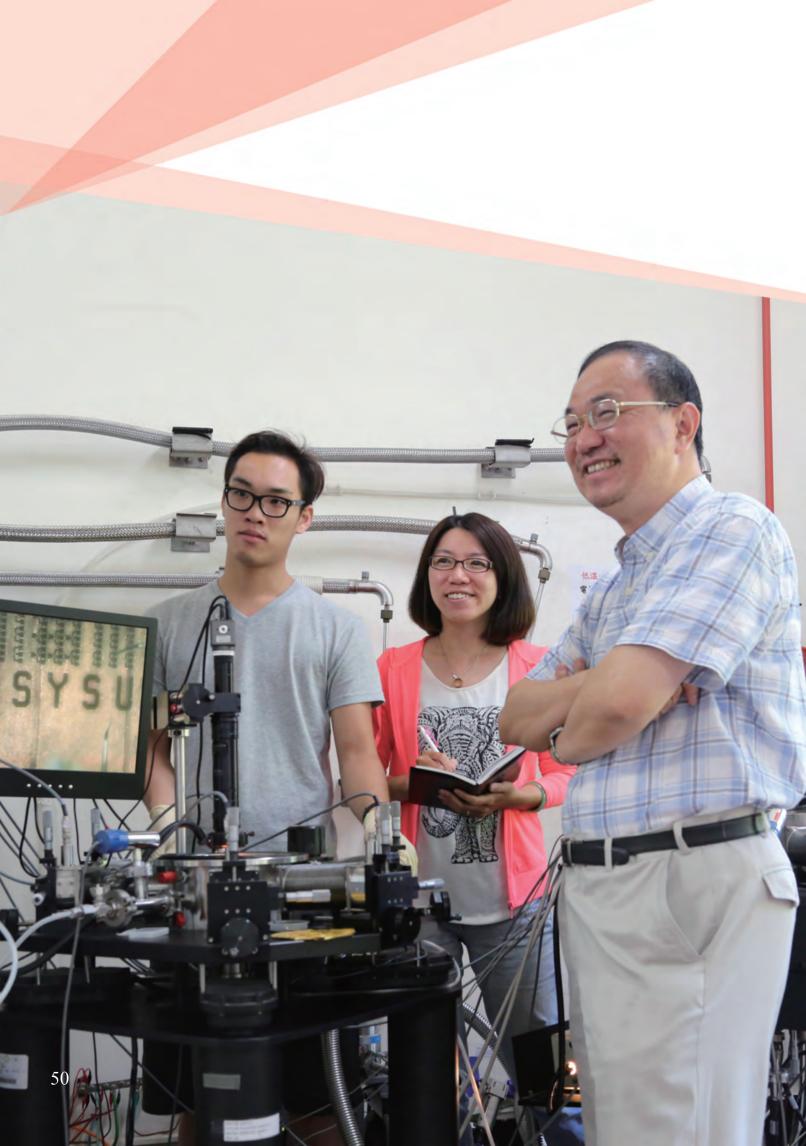
### Next-Generation Teaching Model

### **Digital Learning**

NSYSU has established a "Next-Generation Digital Learning Planning and Promotion Committee" to oversee the development and adoption of digital learning by faculty members. In 2014 we received Ministry of Education (MOE) grants for 3 Massive Open Online Courses (MOOCs). The MOE also approved 8 digital courses and 2 sets of digital teaching materials encompassing e-commerce, service science, engineering and management, applied programming and database systems. The MOE also commissioned NSYSU to manage the 3-year high school online learning program and MOOCs promotion program (2014). Grants for 5 courses were received.

### Capstone Courses and Practical Course Modules

Capstone course and practical course modules were introduced in 2013 with an emphasis on innovative teaching, practical-orientation, industry participation and course quality assurance. The courses combined basic practical skills and a certain level of professional academic research ability. Between 2013 and 2014, 15 faculties executed the capstone course program, 8 institutes implemented the professional enhancement program, 2 programs implemented the cross-disciplinary competency-oriented program, and 2 institutes implemented the enhanced industrial technology module program.



### 創新產學

# Innovations in Industry-University Collaboration



本校積極推動高等教育研發成果轉移產業界,將「產業需求」與「學術研究」緊密結合,數勵產學合作。一方面使學生了解產業需求,另一方面協助產業發展升級。為提升產學績效,訂定各式獎勵措施,與勵行等、評鑑及免辦關措施,獎勵六年內新進教師參則能提高本校產學量能。

2010年至2015年產學合作績效,技術移轉授權金總計達1億2,046萬元;非政府產學合作計畫金額達6億7,922萬元;政府產學合作計畫金額高達7億9,757萬元;推廣教育班收入為1億9,912萬元。

### Industry-University Collaboration

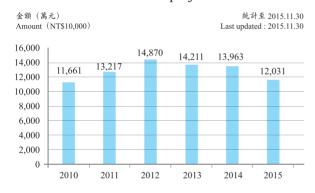
NSYSU actively transfers research results to industry to connect "industry requirements" with "academic research". Industry-university collaboration helps students understand industry and supports industrial upgrading. Our faculty assessments also include related performance incentives. In 2013, we added incentives to encourage new faculty members to participate in industry-university collaboration and technology transfers.

Between 2010 and 2015, technology transfer royalties amounted to NT\$120,460,000. Non-government collaborations amounted to NT\$679,220,000. Government collaborations amounted to NT\$797,570,000. Continuing education course income amounted to NT\$199,120,000.

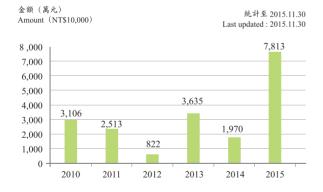


### NSYSU中山35<sup>\*\*</sup> OVER超越頂峰

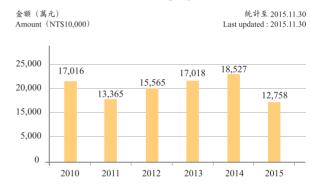
### 非政府建教合作計畫金額 Value of non-government collaborative education projects



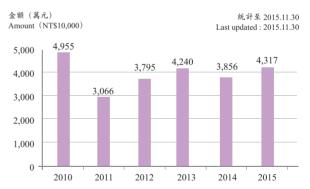
### 年度技術移轉授權金 Technology transfer royalties



### 政府建教合作計畫金額 Value of government collaborative education projects



推廣教育開班金額 Continuing education program income



### Innovations in Industry-University Collaboration

本校的產學合作以「行政院經濟動能推升方案」為主軸,結合校内頂尖研究中心及潛力研究群,聚焦於產業需求,加速研發成果於產業之應用,提升產業附加價值。除投入工業基礎技術研究,在六大新興產業中,亦積極參與南部生技醫療器材產業聚落計畫,建構優質產業聚落,帶動周邊產業發展,以形成優質有效的產業價值鏈。

配合科技部「產學小聯盟」計畫,陸續成立「海洋藥粧商品轉譯聯盟」、「半導體元件電性量測及製程技術研發聯盟」及「能源整合及管理聯盟」,積極建構產學合作小聯盟的合作模式。

在能源發展政策方面,配合經濟部 政策投入開發創新性之能源科技, 例如「多接面矽晶太陽能電池技術 研發」、「微藻作為催化劑進行光 反應器固定煙道氣二氧化碳以生產 氣態生質能技術」、「可撓式有機 發光二極體照明技術開發」,期望 能協助我國能源產業提升技術水 準。



Industry-university collaboration at NSYSU is based around the "Economic Power-up Plan of the Executive Yuan". Our top and emerging research teams focus on industry requirements to accelerate commercialization and boost value-adding. Apart from research into basic industrial research, we also actively participate in the southern biotechnology & medical device industry cluster program to form an effective industry value chain.

To support the "Minor Alliances between Academia and Industry" proposed by the Ministry of Science and Technology (MOST), we established the "Translation League of Marine Cosmeceutical", "Semiconductor Device Electrical Measurement and Process Technology R&D League, and "Energy Integration and Management League.

To support the energy development policy set by the Ministry of Economic Affairs (MOEA), we focused on developing innovative energy technologies such as multi-junction Si PV cells, algae bio-reactors and flexible OLED lighting.

### NSYSU中山35<sup>th</sup> OVER超越頂峰 THETOP

「西灣產學俱樂部」於103年12月成立,匯集各領域企業及校友,為一新型產學交流平台,由學校主動展示各學院研發能量及整合性的產學服務,加速學研成果與產業接軌,共創經濟價值。自104年起每年舉辦2次技術媒合活動,至今共招收92名會員,媒合需求案件20餘件,成功媒合2件產學計畫案。

本校於103年與校友總會成立西灣天使投資公司,募集5000萬資金,提供師生創業團隊種子資金的挹注,及技術、輔導等創業服務。西灣天使投資公司已成功投資三間校内師生創業團隊及本校之育成廠商,皆為五年内之新創公司,累計投資約計750萬元。

103年獲得校友捐贈籌建70坪中山貨櫃創業基地,以創意辦公室的概念進行規劃,提供潛力創業團隊免費進駐。從鼓勵師生創業補助、籌建中山貨櫃創業基地、西灣天使的成立與投資、獲選教育部創業創新紮根示範學校,以及結合港都會、高雄市青年創業協會、工商建設研究會,簽訂創業培育合作備忘錄等,充分展現了中山大學在推動創新、創業的企圖心。



The "Siwan Industry-Academic Collaboration Club" founded in December, 2014, is a new industry-academic exchange platform that brings together businesses and alumni in different fields. The Club enables the NSYSU to demonstrate the R&D capabilities and integrated industry-academic services of each college. This helps to accelerate matchmaking between academic research results and the industry in order to generate economic value. Starting in 2015, two technology matchmaking events are held every year. The Club now has 92 members, has more than 20 matchmaking requests on record and successfully brought about 2 industry-academic cooperation programs.

The NSYU partnered with the Alumni Associations to raise NT\$50 million for the founding of the Siwan Angels Investment Company in 2014. The new company provides start-up teams set up by faculty members and students at NSYSU with seed money as well as technical and counseling services. The Siwan Angels Investment Company has now successfully invested in three start-ups set by NSYSU faculty members and students as well as incubator companies. All were start-ups set up within the last 5 years and total investments are currently around NT\$7.5 million.

In 2014, alumni donations enabled the establishment of the NSYSU Startup Container site covering 230m2. The site is designed to be a creative office that is provided for free to potential startups. From subsidies for teacher and student startups, the building of the NSYSU Startup Container site, Siwan Angel Investor's founding and investment, selection as demonstration university for the MOE's EC-SOS program to the signing of MOUs on start-up incubation with these initiatives all demonstrated NSYSU's commitment to promoting innovation and entrepreneurship.



### 產學亮點

本校已連續四年(100-103年)獲科技部績優技術移轉中心獎助。物理系張鼎張教授榮獲104年經濟部「第四屆國家產業創新獎」,材光系周明奇教授榮獲「103年行政院傑出科技貢獻獎」;資工系黃英哲教授、電機系黃義佑教授榮獲102年度及103年度經濟部「國家發明創作獎」發明獎銀牌。

### Industry-University Collaboration Highlights

• NSYSU has received MOST Outstanding Technology Transfer Center grants for four consecutive years (2011 - 2014). Prof. Ting-chang Chang from Department of Physics was awarded 4th "National Industrial Innovation Award" by the MOEA in 2015. Prof. Ming-chi Chou from the Department of Materials and Optoelectronic Science received the Executive Yuan "2014 Outstanding Contributions in Science & Technology" award; Prof. Ing-jer Huang from the Department of Information Engineering and Prof. I-yu Huang from the Department of Electrical Engineering won the MOEA "National Invention and Creation Award" silver medal in 2013 and 2014 respectively.

### NSYSU中山<sup>35</sup> OVER超越頂峰 THE TOP

- 電機系教授洪子聖耗費六年時間研發出可攜式 雷達,可準確隔空偵測動物的生理狀況,及早 發現異常之動物,且無需接觸,確保乳肉品 質。此尖端發明令美國酪農系統設備開發商 (Vitalmetric, LLC) 讚嘆驚艷,今年雙方簽約合 作,授權金額高達美金200萬元,打破電子資通 領域國內紀錄。
- 光電系副教授張美濙與黃文堯教授,共同研發 三種應用於可撓式OLED(有機發光二極體 Organic Light-Emitting Diode的縮寫)元件的 關鍵材料,包括功能性軟性電子基板、可撓式 透明導電薄膜和深藍光高分子發光材料,未來 可應用於各種光電器材,包括電視、手機等。 兩位教授與華宏新技公司產學合作,成為全國 首批獲得經濟部補助的共同開發計畫,獲得政 府高度重視。
- 本校與建準電機公司及中國鋼鐵公司等在地指標型企業分別成立建準研發中心及金屬物性與微結構研究中心,另與財團法人金屬中心成立中山大學暨金屬中心聯合學研中心。2009年至2013年在地指標型企業及法人投入6,000萬以上之經費整合中山大學與產業界之技術、人才與設備,以提升雙方研究發展水準。



- Prof. Tzyy-sheng Horng from the Department of Electrical Engineering developed over six years a portable radar capable of non-contact detection of animals' physiological condition. It can also provide early warning on abnormal animals to ensure milk and meat quality. This advanced invention so impressed Vitalmetric, LLC, a U.S. dairy systems developer, that a licensing agreement worth US\$2 million was signed this year. This represented a new record in Taiwan for electronics, information and communications.
- Prof. Mei-ying Chang and Prof. Wen-yao Huang from the Department of Photonics codeveloped three types of critical materials used in wrappable OLED (Organic Light-Emitting Diode) devices. The functional flexible electronic substrate, wrappable transparent conductor membrane and blue electroluminescent polymer materials has future applications in photonics equipment such as TVs and mobile phones. The two professors have set up an industry-academia cooperation program with Wah Hong Industrial Corp. The project has attracted strong official interest and is among the first group of joint research projects in Taiwan to receive grants from the MOEA.
- NSYSU has partnered with leading local enterprises such as Sunon and China Steel Corp. to establish the Sunon Research Center and Engineering Research Center of Metal Physical Property and Microstructure. We also established a NSYSU-MIRDC joint research center. Between 2009-2013, our corporate and institutional partners invested more than NT\$60 million to improve and integrate the software/hardware of the joint research facilities.



- 除與指標型產業合作外,也建立與中小企業相 互依存的共利關係,深耕地方產業發展,推動 高屏區域產業升級,並積極與鄰近科技園區及 工業會等合作。
- 本校自2010年起連續四年執行高雄市政府綠色 育成中心營運管理計畫,至2014年累計培育廠 商達20家,總資本額超過2億元,歷年計畫經費 合計超過2,500萬元。
- 於高雄軟體園區與南科高雄園區,積極推動南區IC設計、數位内容與醫療器材產業之發展,並在園區內部設立「中山大學促進產業發展研究中心」,協助高軟園區之蓬勃發展。
- 本校於2009年底協助成立「中華民國高雄軟體園區產學策進會」,目前由楊弘敦校長擔任榮譽理事長,吳濟華副校長擔任理事長推動提升高雄軟體園區進駐廠商於數位內容、雲端運算、IC設計、文化創意、環保節能及船舶設計等六大產業之競爭力,並輔導南部廠商取得政府研發資源。101-104年舉辦大型「放視大賞競賽活動」,每年群聚南部20餘校,超過7,000位大學校院學生參賽,並吸引全國數位內容廠商蒞臨,積極促成產學合作計畫、技術移轉及人才就業媒合案。

- Apart from collaborating with benchmark industries, we have also formed symbiotic relationships with small and medium enterprises to support industry development in the Kaohsiung-Pingtung region. We also work closely with nearby science parks and industry associations.
- NSYSU has managed Kaohsiung City Government's green incubation center for four consecutive years since 2010. As of 2014, we have incubated 20 companies with a total capitalization in excess of \$200 million. Cumulative program funding exceeded NT\$25 million.
- We actively support the development of IC design, digital content and medical device industries in Kaohsiung Software Park and the Kaohsiung Campus of Southern Taiwan Science Park. The "Southern Taiwan Industry Promotion Center" was also set up in the Kaohsiung Software Park.
- NSYSU helped found the "Academia-Industry Consortium of Kaohsiung Software Park" at the end of 2009 with University President Hungduen Yang as honorary president, and Vice-President Jih-hwa Wu as president to help enhance the competitiveness of Kaohsiung Software Park tenants from the digital content, cloud computing, IC design, cultural creativity, green energy and ship design industries. The Consortium also assists companies in southern Taiwan with securing government research and development resources. Competitions involving more than 7,000 university students from more than 20 universities in southern Taiwan are held every year. These have drawn strong interest from digital content vendors throughout Taiwan and have helped lead to industry-academia cooperation projects, technology transfers and talent recruitment programs.





### 國際視野

### **International Perspective**

本校以積極並務實的方式,致力推動 國際交流,除積極吸引國外優秀人才 來校,亦推動本國學生參加海外研 修,以培養學生國際素養,使學生具 備國際觀。

### 培育國際頂尖及具 國際移動能力人才

在教師方面,為鼓勵本校教師赴海外 充實新知,提升教學研究水準,加強 教學與學術研究,新訂「教授及副教 授休假研究辦法」及「教師及研究人 員出國講學研究進修實施要點」。教 師可以依據「頂尖大學聯盟選送優秀 人才辦法」及「國立中山大學推薦優 秀人才赴國外頂尖大學學術交流合作 辦法」,或藉由申請科技部「任務導 向型團隊赴國外研習計書」(龍門計 畫),至國際頂尖研究中心,進行研 究合作。近年來,本校計有機電系朱 訓鵬教授、物理系邱雅萍教授、物理 系周雄教授通過計畫申請,分別至澳 州、美國及日本等頂尖研究單位進行 研究。

NSYSU promotes international exchange by attracting overseas talent and by encouraging local students to acquire an international perspective through overseas study.

### Cultivating International Talent and Mobility

For faculty members, we have introduced rules that encourage them to travel overseas for self-development and to improve their standard of teaching and research. These include research collaborations at top international research centers through the Top University League, NSYSU's international exchange program and the National Science Council's Dragon Gate Program. In recent years, Prof. Shin-pon Ju from the Department of Mechanical and Electromechanical Engineering, Prof. Ya-ping Chiu from the Department of Physics and Prof. Hsiung Chou from the Department of Physics were given approval to join leading research units in Australia, the U.S. and Japan.

### NSYSU中山35<sup>®</sup> OVER超越頂峰 THETOP



本校設有中山美國中心、中山歐盟中心、日本研究中心及韓國研究中心,並配合教育部與科技部政策,與美國、歐盟、日本等國家相關機構進行實質交流合作。本校「全球學術合作中心」,專責協助教師及學生跨國合作,提供補助及獎勵,近5年國際合作論文數大幅成長32%。

在學生方面,鼓勵博士生出席國際會議或至國外進行短期研修,統計近5年數據分別有17位博士生獲教育部千里馬計畫及5位學生獲本校補助出國短期研修;88位學生獲得教育部補助出席國際會議;258位學生獲得科技部補助出席國際會議。另外亦積極招收外籍生至本校就讀博士班,近5年每學年外籍博士生總人數約50人,佔全體博士生總數約6%,為延攬優秀外籍博士生就讀,102年增加「優秀外籍博士生獎學金」,提供外籍博士生每月新臺幣3萬元獎學金。

NSYSU has set up an America Center, European Union Center, Center for Japanese Studies, and Center for Korean Studies. We also set up exchange agreements with similar organizations in the US, EU and Japan in accordance with Ministry of Education (MOE) and Ministry of Science and Technology (MOST) policies. Our Global Academic Research Collaboration Center is dedicated to providing faculty members and students with subsidies, incentives and assistance on international collaboration. Our number of joint international papers have jumped by 32% within the past five years.

For students, we encouraged Ph.D. students to attend international conferences or take part in short-term study abroad. In the last five years, 17 Ph.D. students were chosen for the MOE "Thousand-Mile Horse Program", 5 students received NSYSU grants for short-term overseas study, 88 students received MOE grants to attend international conferences and 258 students received MOST grants to attend international conferences. We also actively recruit overseas Ph.D. students. In the last five years, the total number of international Ph.D. students each academic year is around 50, accounted for 6% of all Ph.D. students. To recruit talented international Ph.D. students, an "Outstanding International Ph.D. Student Scholarship" worth NT\$30,000 per month was added in 2013.





為了培育國際移動能力人才,舉辦多場國際計畫寫作與論文寫作之專題演講,提昇專業語文能力;更鼓勵研究生、研究中心或研究群出國進修或研究。例如:海洋生物科技學位學程博士生張祐嘉,參與「臺灣南極科學考察團隊」,為第一位赴南極進行研究的臺灣學生。考察團隊從採集到的南極海膽、海綿等生物樣本中,發現南極生物萃取物具發展成新藥之機會。材光系博士生羅友杰,至麻省理工學院進修,以第一作者發表了2篇論文,分別刊登於Science及Nature Communications期刊。

### • 來校國際學生及出國學生數穩定成長

99學年度至103學年度,境外學位生人數由300 人增加至432人,成長44%; 國際交換研修生由 238人增至676人,成長率為184%。學生出國交 換研修人數,自191人增加為393人。特別是新 加坡南洋理工大學自費選讀生,自99學年度開辦 以來,從11人增加至227人,成長相當可觀。

### ● 設置全英語課程並補助教師開設短期出 國研修課程

積極推動由教師規劃赴國外姐妹校進行短期研修課程(包含以學術性質為主之教學及參訪活動),以擴展學生之國際移動能力及加強與姐妹校之校研合作交流。98-103學年度核定補助20門課程共補助453位學生,參與之老師與學生反應熱烈,給予極正面的回應。

To cultivate internationally mobile talent we hosted many lectures on writing international proposals/papers and improving language proficiency. We also encourage graduate students, centers and groups to study or carry out research overseas. Marine Biotechnology Ph.D student Youchia Chang for example joined the "Taiwan Antarctic Research Expedition", becoming the first Taiwanese student to travel to the Antarctic for research work. Extracts from the samples of Antarctic urchins and sponges collected by the expedition offer hope of developing new drugs. Materials and Optoelectronic Sciences Ph.D. student You-chie Lo went to study at MIT where he became the first author on a paper for Science and a paper on Nature Communications.

### Steady Growth in International Students

Between 2010 and 2014, the number of students with overseas degrees increased by 44% from 300 to 432; international exchange students grew by 184% from 238 to 676. The number of students on international exchanges grew from 191 to 393. The number of fee-paying students from the Nanyang Technological University in Singapore in particular has grown from 11 in 2010 to 227 today.

### English Courses and Short-Term Overseas Study

Faculty members are actively supported with organizing short-term courses at overseas sister universities (including courses and field trips) to boost students' international mobility and strengthen research collaboration. Between 2009 and 2014 academic year, subsidies were approved for 453 students in 20 courses. The feedback from participating faculty members and students were overwhelmingly positive.

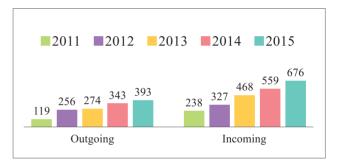


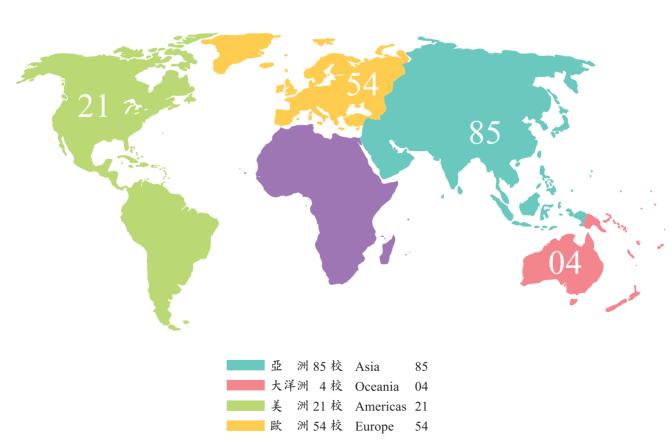
### 全球164所姐妹校 164 Global sister universities

國際學位生人數 International students (degree)



交換及研修生人數 Exchange students (non-degree)





- 本校與全球36國164所國外大學簽訂姐妹校,其 中亞洲85校、大洋洲4校、美洲21校及歐洲54 校。並與其中131所簽有交換學生協議,學生實 質往來交流比例約達80%。除提供本校學生出國 機會,每年亦吸引約600名外籍學生至本校交流 學習,有助校園國際化氛圍營造與發展。
- ◆持續推動全英語授課學位學程(2015年有5個碩 士學程和1個博士學程),國際學生人數穩定成 長。
- 僑生輔導制度完善,2010年榮獲僑生輔導績優 學校獎、2009年及2013年二度榮獲僑生輔導工 作績優與資深人員獎。
- 管理學院2005年領先國内大學首度通過AACSB (美國商管學院聯合促進會)認證,並分別於 2010及2015年通過再認證,是本校最具國際化 與全球競爭力之領域。
- NSYSU has signed sister university agreements with 164 foreign universities in 36 countries. These included 85 in Asia, 4 in Oceania, 21 in the Americas and 54 in Europe. We also signed exchange student agreements with 131 and about 80% are active. Apart from giving our students a chance to travel overseas, we also host around 600 international exchange students each year. This has helped cultivate an internationalized atmosphere on campus.
- We continue to promote English degree programs (5 Master and 1 Ph.D. programs are offered in 2015) and the number of international students has continued to grow steadily.
- Due to our effective overseas Chinese student counseling system, NSYSU has been recognized with Ministry of Education awards in 2009, 2010 and 2013.
- The College of Management was the first university faculty in Taiwan to achieve AACSB accreditation in 2005. The accreditation was renewed in 2010 and 2015, serving as an unequivocal evidence of NSYSU's internationalization and global competitiveness.





### 區域聯盟/社會責任

### Regional Alliances / Social Responsibility



### 臺灣綜合大學系統 校際合作

臺灣綜合大學系統(簡稱臺綜大)結合本校、成功大學、中興大學及中正大學四校,整合各校特色,促進校際合作共享。實施跨校雙主修及輔系,課程整合(跨校選課、夏日大學、通識巡迴講座)、新進教師研習、教學助理聯合培訓及學科競賽等。

其他合作包括臺綜大重要學術電子書館藏建立、臺綜大中英對照法規資料庫建置、舉辦「正興城灣盃」校際競賽、學生社團幹部訓練營、總務工作圈行政推動等,在研究、大型貴重儀器、產學、促進國際化與國際知名度、圖書、教務、學務及行政相關事務上,四校資源整合共享並制定相關法規,全面推動發展合作關係。

### Taiwan Comprehensive University System

The Taiwan Comprehensive University System combines the strengths of NSYSU, NCKU, NCHU and NCCU. These include inter-university "double majors" and "minors", integrated teaching resources, new faculty seminars, joint student training and competitive events. Other collaborations include electronic library, bilingual regulatory database, hosting of interuniversity competitions, joint student club officer training and general administration initiatives. The four universities share resources and develop regulations on research, large high-cost instruments, industryuniversity collaboration, internationalization and international presence, library resources, academic affairs, student affairs and administration.

### NSYSU中山35 OVER超越頂峰

### 帶動區域學校提升教學品質一高東屏區域 教學資源中心

100-101年度本校為教育部「高高屏區域教學資源中心計畫」之中心學校,負責整合區域内高等教育大專校院,推動各項教學資源整合與分享,以提升教學品質。101-102年度獲教育部補助推動「大學校院協助高中優質教育品質。102-104年度本校為教育部「高東屏區域教學資源中心計畫」之中心學校,推動「基礎能力檢測機制」,並成立「大學教學與行政效能及學習成效評估中心」,持續推動區域教學資源整合與分享。

### 與高雄醫學大學成立 「攻頂大學聯盟」

本校與高雄醫學大學學科領域互補,於101 年12月27日簽署聯盟合約,就教學、研究、學務、產學合作、國際事務、行政支援 等成立六個工作圏進行合作交流,並於103 年度將兩校聯盟推動計畫書送教育部備查。

本校與高醫大在101年共投入1,000萬元,進行學術合作,兩校組成33個研究計畫團隊,共同發表論文已達97篇。102年兩校共出資1,600萬元,在既有的合作基礎上擴大深化,組成46個研究團隊,於102年共同發表論文153篇,較101年成長57%。在教學上,102年兩校教學資源整合分享,學生可跨校雙主修及修習輔系。此外,102年高雄醫學大學與中山大學共同為「高東屏區域教學資源中心」召集學校,兩校共同整合、推動與提升區域高等教育教學品質。

### KTP Regional Resource Center for Teaching and Learning

Between 2011 - 2012 NSYSU was appointed by the MOE "KKP (Kaohsiung City-Kaohsiung County-Pingtung County) Regional Teaching Resource Center Project" as the core university for integrating the teaching resources of regional universities. Between 2012 -2013 we also received MOE grants to improve the teaching quality of local senior high schools. The KKP project was expanded to include Taitung area in 2013. NSYSU was named the core university of the MOE "KTP (Kaoshiung-Taitung-Pingtung) Regional Resource Center for Teaching and Learning" between 2013 -2014. Apart from promoting "Basic Proficiency Test", NSYSU also set up the Center for Teaching Effectiveness & Learning Outcome Assessment to continue promoting the integration and sharing of regional teaching resources.

### "Aim-for-the-Top" with KMU

Research at NSYSU and KMU complement in each other so an agreement was signed on December 27, 2012, on collaborative exchange in teaching, research, student affairs, industry-university collaboration, international affairs and administrative support. The inter-university alliance plan was submitted to MOE for reference in 2014.

NSYSU and KMU invested more than NT\$10 million in academic collaboration. The two universities have formed 33 research projects and jointly published 97 papers. In 2013 the two universities spent NT\$16 million to expand their collaboration and formed 46 research teams. In 2013, the two jointly published 153 articles, up 57% from 2012. In 2013, both universities integrated their teaching resources allowing students to undertake double majors and/or minors. NSYSU and KMU were also the joint conveners of the "KTP Regional Resource Center for Teaching and Learning" in 2013.

## 成立「高雄市大專院校校 長聯誼會」

針對攸關在地大專院校與社區發展議題,邀請高雄 地區大專院校共同成立「高雄市大專院校校長聯誼 會」,發起「高雄的大學,高雄的智庫」下午茶座 談會,建立與高雄市政府定期研討,提出建言機制 與管道。

# Established " Kaohsiung University Presidents Association"

The Kaohsiung University Presidents Association was established to form a consultative mechanism to address important development issues pertaining to local universities and communities. To provide for an avenue to increase government-academia dialogue, a regular "Kaoshiung University Think Tank" afternoon meetings was established to serve as an advisory mechanism to local government.



### NSYSU中山35 OVER超越頂峰

### 海洋策略聯盟

為整合海洋研究產業及事務人力資源,形成完 整研究團隊,以智庫角色提供政府建言,本校 於101年結合七個海洋相關單位組成「海洋策 略聯盟」。另於103年與國家實驗研究院台灣海 洋科技研究中心、國立海洋生物博物館、中央 氣象局、交通部航港局、高雄海洋科大、澎湖 科大、中油、中鋼機械、縣市政府、區漁會、 海事工程、環境保護設備工程、海運業等涵蓋 我國海洋相關領域產官學研界的團體及個人共 76名會員(代表)正式成立「臺灣海洋產學策 進會」,希望加強產學實質化,推動「海洋產 業」、「海洋資源與科技」、「海洋生態與保育」 及「海洋教育」等面向的發展,提供國家及地 方政府的海洋策略建言,以產官學研界充沛的 能量與資源,促進海洋產業與科技升級,並培 植海洋專業人才。

### 臺灣海洋產學策進會

集合產官學研單位籌備的「臺灣海洋產學策進會」於103年8月28日正式成立,第一屆理事長為中山大學海工系教授陳陽益,副理事長為中山大學校長楊弘敦,以產官學研界充沛能量與資源全力推動海洋相關事務。



### Marine Strategic Alliance

NSYSU partnered with seven marine-related units in 2012 to form the "Marine Strategic Alliance", a think tank that integrates marine research and administrative human resources. In 2014, the "Taiwan Ocean Academia-Industry "Consortium was formed with 76 members including the organizations and individuals from the Taiwan Ocean Research Institute, National Museum of Marine Biology and Aquarium, Central Weather Bureau, Maritime and Port Bureau, MOTC (Ministry of Transportation and Communications), National Kaohsiung Marine University, National Penghu University of Science and Technology, CPC Corporation, China Steel Machinery Corporation, local governments, regional fisherman associations, marine engineering, environmental protection equipment and engineering, and shipping industries of Taiwan. The Consortium promotes developments in "marine industry", "marine resource and technology", "marine ecology and conservation" and "marine education" to provide the national and local government with recommendations on marine strategy. The resources of the industry, government, university and research sectors are harnessed to upgrade marine industries and technologies as well as cultivate marine expertise.

### Taiwan Ocean Academia-Industry Consortium

The "Taiwan Ocean Academia-Industry Consortium (TOAIC) was formally established on August 28, 2014, as a partnership between the industry, public, university and research sectors. Prof. Yang-yih Chen from the NSYSU Department of Marine Environment and Engineering was appointed the founding president with NSYSU President Hung-duen Yang as the vice-president. TOAIC will leverage industry-public-university-research capabilities and resources to promote ocean-related affairs.

### 社會服務與關懷

- 為扶助弱勢學生,增加個人申請南星計畫招生名額,由97學年度27人(佔新生人數2.4%)提高至102學年度217人(佔新生人數19.5%)。103學年度並獲教育部弱勢學生「起飛計畫」補助,將推動暑期返鄉輔導機制,讓表現理想的學生返鄉回饋,並設計學習增能班、學習輔導角落等方案,從入學開始落實對弱勢學生整體學習歷程的關照。
- 99年成立「國家政策研究中心」,以「公共智庫 在地參與追求卓越」,成為大高雄地區社會、文化、經濟,整體發展的發動機,帶動大高雄地區的繁榮與進步。

### Social Service and Pastoral Care

- To increase the representation of disadvantaged students in tertiary education, NSYSU has increased its quota from the Southern Stars program from 27 in 2008 (2.4% of new enrollments) to 217 in 2013 (19.5% of new enrollments). In 2014, Ministry of Education subsidies under the "Take-Off Program" is applied to recruit disadvantaged students to offer summer mentoring in their home towns. Enhanced classes and mentoring corners will also provide students with learning assistance after enrollment.
- The National Policy Research Center was established as a center of research excellence and serve as public think tank emphasizing local participation and input to assist in promoting and stimulating the social, cultural, economic and growth of Greater Kaoshiung area.



### NSYSU中山35 OVER超越頂峰



- 傑出專家學者借調政府機構貢獻長才,例如:海 科系林慧玲教授擔任國家實驗研究院台灣海洋科 技研究中心主任(103年起)、企管系葉匡時教 授擔任交通部長(102-104年)、海下海物所劉 金源教授擔任臺東大學校長(101-105年)、經 濟所蔡蕙安教授擔任行政院公平交易委員會委員 (99-104年)、公事所吳濟華教授擔任高雄捷運股 份有限公司董事長(99-101年)、教育所蔡清華 教授擔任高雄市教育局局長(99-101年)、通識 教育中心楊念祖助理教授擔任國防部副部長 (98-102年)、海洋生物科技暨資源學系王維賢教 授擔任國立海洋生物博物館館長(95-103年)。
- 本校推展藝文活動不遺餘力,每學期舉辦藝術季活動,服務南臺灣地區民衆超過6萬人以上。並與世界級音樂大師舉行音樂會和座談等活動,成為南臺灣藝術推動搖籃與人文教育之重鎮。本校巴洛克獨奏家樂團主要成員為南臺灣音樂演奏菁英,培育音樂人才,透過在校園、城市與鄉間之頻繁演出,傳播美妙樂音,推廣人文藝術。
- NSYSU academics are sought after by government and agencies for their expertise and over the decades have been appointed to national, regional, and local government agencies. At the national government level, numerous NSYSU academics have led ministries, statutory commissions, national universities, public enterprises, and other important government agencies.
- NSYSU spares no effort when it comes to promoting performing and creative arts. Art festivals are held every semester for more than 60,000 people in southern Taiwan. Our concerts and workshops with world-class musicians make us the regional hub of performing and creative arts. The Baroque Camerata of NSYSU is made up of top music performers in southern Taiwan. Frequent performances on campus, in the cities and the countryside spread the beauty of music and the arts.





### 結合畢業校友服務平台

2010年4月楊弘敦校長發起「西子樓校友會館圓夢計畫」,在張玉山前主任秘書及秘書室同仁的規劃執行下,獲得校友們熱情回應,共籌得6,000餘萬,加上校友們的實體捐贈,「西子樓校友會館」於101年11月32周年校慶時揭牌啓用。這棟位於高雄港出海口的校友會館是欣賞西子灣落日的最佳景點,由本校余光中名譽博士命名為「西子樓」。

### Alumni Service Platform

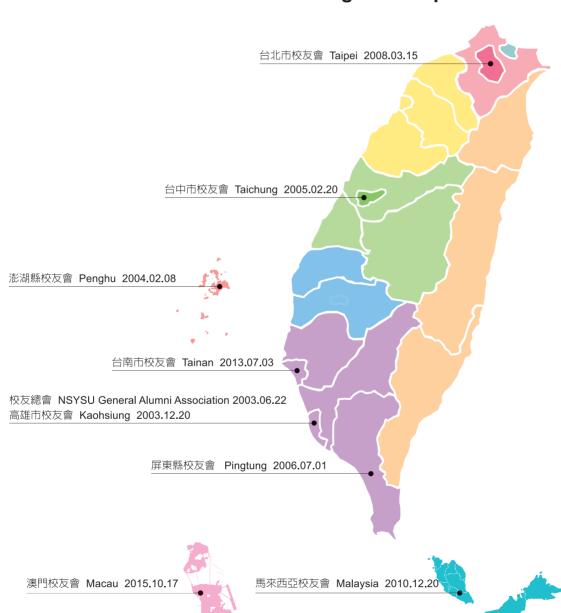
• In April, 2010, President Hong-duen Yang launched the "Sizihwan Alumni House Campaign" with help from former Chief Secretary, Prof. Yu-shan Chang and staff of the Office of Secretariat. The campaign received strong support and raised more than NT\$60 million as well as other physical goods and services. The "Alumni House" was officially unveiled in November 2012, as part of NSYSU's 32nd anniversary celebrations. Located at the harbor entrance of Kaohsiung Port and a perfect site for the sunset view, the Alumni House was named "Sizih House" by NSYSU Honorary Professor Kwang-chung Yu.



### NSYSU中山之 OVER超越頂峰

- 103年「校友服務中心」成為學校正式行政單位,更加積極展開校友連繫與服務。在與國立中山大學校友總會聯手推動下,國內、外校友分會紛紛設立,聯繫四萬七千餘已畢業的中山人感情。
- The NSYSU Alumni Service Center began an official administrative unit of the University in 2014 to provide more proactive contact and services with NSYSU alumni. With the help of the NSYSU General Alumni Association, a number of local and overseas chapters have since sprung up to keep in touch with more than 47,000 NSYSU alumni around the world.

### 校友總會及地區校友會分布圖 Alumni Association Regional Map





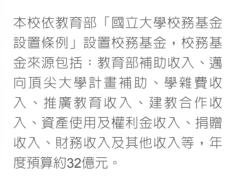
- 中山大學的校務發展在校友、社會人士與企業不斷地挹注,捐贈收入逐年增加。為感念歷年來累計達百萬元以上捐款人的無私奉獻,特別於2015年35周年校慶時於逸仙館建置「西灣之光」捐款芳名牆。這幅饒富西灣意象的芳名牆,湛藍海水象徵著「百萬樹人掖後學」,潮浪推進沙灘「三華匯聚成黌舍」,青山翠巒「五芒星輝興中山」,豔陽閃耀「干萬光彩耀西灣」。
- 本校原設有台北聯絡處,於100年整修完成, 設置有兩間會議室,可作為本校教師及行政人 員於台北辦公與聯繫公務之處所,並支援本校 研究所台北招生及碩博士論文口試場地用途。
- 103年與國立中山大學校友文化基金會簽訂租 賃契約,將基金會空間命名為「台北逸仙會 館」,104年底整修竣工並揭幕,開始正式營 運。台北逸仙會館為校友服務活動、本校授 課、推廣教育、辦理研討會及產學發表會之基 地,成為中山人台北的家。

- Contributions to the development of NSYSU has continued to grow every year. To express our appreciation for donors who have selflessly donated more than NT\$100 million over the years, a "Light of Sizihwan" donor wall was established during the 35th anniversary celebrations in 2015. On this donor wall, the blue seawater represented the contributions to education, the waves on the sand represented the accumulation of talent, the green mountains represented the strength of NSYSU while the bright sun basked Sizihwan in a warm glow.
- The NSYSU Taipei Liaison Office was refurbished in 2011 and features two conference rooms available for office and business use. It is also used as the Taipei venue for student recruitment and graduate students' oral examinations.
- In 2014, a lease was signed with the NSYSU Alumni Cultural Foundation name its premises as the "Taipei Sun Yat-sen House" and the new facility was unveiled at the end of 2015 after the renovations were complete. The Taipei Sun Yat-sen House is used for alumni services, continuing education, and press conferences. It provides the NSYSU family with a home in Taipei.









在政府補助有限之下,本校仍積極 開源節流。近五年五項自籌(含捐 贈收入、場地設備利用、建教合作 收入、推廣教育收入、投資取得等 五項)及其他收入持續成長,學校 募款金額更大幅提升,務使全校師 生能在教學、研究、產學合作及國 際人才培育等各方面繼續全面發 展。 The NSYSU Endowment Fund is funded by Ministry of Education subsidies, Aim-for-the-Top University Program, tuition and fees, continuing education income, cooperative education income, facility management and entitlement premium income, donation income, financial revenues and other income. Annual operating budgets amount to around NT\$3.2 billion.

NSYSU makes the best of the limited government funding so that our faculty members and students can continue their development in teaching, research, industry-university collaboration and the cultivation of international talent.





### 103年度收入分析 Income analysis as of 2014

單位:元 Unit: NT Dollar

	Offit. 141 Dolla	
項目 Item	金額 Amount	百分比 Percentage
學雜費收入 Tuition and fees	521,262,247	15.98%
建教合作收入 Cooperative education	1,068,283,469	32.74%
推廣教育收入 Continuing education	44,825,362	1.37%
學校教學研究補助收入 Teaching and research subsidies	1,044,390,000	32.01%
其他補助收入 Other subsidies	317,622,648	9.74%
雜項業務收入 Misc. operating income	13,445,770	0.41%
財務收入 Financial revenues	42,957,322	1.32%
資產使用及權利金收入 Facility management and entitlement premium	142,599,098	4.37%
受贈收入 Donation income	53,897,674	1.65%
違規罰款收入 Contract penalties	109,013	0.00%
雜項收入 Misc. income	13,255,416	0.41%
合計 Total	3,262,648,019	100.00%

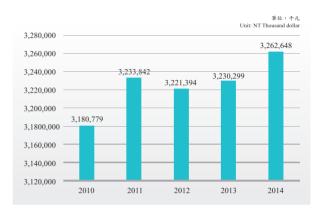
#### 備註:

- 1. 學雜費收入已扣除減冤數19,479,835元。
- 2. 雜項業務收入為招生考試收入。
- 3. 資產使用及權利金收入為宿舍、停車場等活動場所收入。

#### Remarks:

- 1. Tuition and fees income has exempted tuition waivers of \$19,479,835.
- 2. Misc. operating income indicates admission examination registration fees.
- 3. Facility management and entitlement premium include dormitory fees, parking and other venue .

### 近五年收入預算 Operating budgets 2010-2014



### 103年度支出分析 Expenditure analysis as of 2014

單位:元 Unit: NT Dollar

		Offil. NT Dollar
項目 Item	金額 Amount	百分比 Percentage
教學研究及訓輔成本 Teaching and research expenses	1,640,794,685	49.78%
建教合作成本 Cooperative education expenses	1,043,190,472	31.65%
推廣教育成本 Continuing education expenses	39,316,678	1.19%
學生公費及獎勵金 Students scholarship and fellowship expenses	165,333,710	5.02%
管理及總務費用 General and administrative expenses	275,385,575	8.35%
雜項業務費用 Misc. operating expenses	9,883,826	0.30%
雜項費用 Misc. expenses	122,196,115	3.71%
合計 Total	3,296,101,061	100.00%

#### 備註:

- 1.雜項業務費用為招生考試費用。
- 2.雜項費用主要為各場館費用。

#### Remarks

- 1. Misc. operating expenses indicate admission examination operating costs.
- 2. Misc. expenses indicate venue costs.

### 永續經營

- 99年因應建校30周年發起之專案募款(整建西子樓校友會館),獲得校友之認同,在資源籌措上頗見成效。該會館已於102年3月整建完成,開始營運。103年成立本校「募款策略規劃及推動委員會」,針對學校相關計畫及措施,輔以相關募款策略運作,以增益本校校務基金。
- 本校原「產學營運中心」於99年1月正式納編為 一級行政中心,首開全國之先例,更於103年8 月1日改制為「產學營運及推廣教育處」,專責 整合產學合作、智財技轉、新創育成及推廣教育相關業務及資源,展現服務的決心,加強與 企業界之聯結,尋求企業資源,以發揮綜效。
- 有關投資取得部分,本校已成立「資金運作小組」,將依現行規範,靈活彈性運用校務基金,增加收入。本校投資策略以長期資產配置觀念進行校務基金有價證券投資,並採「買進持有」方式選擇現金股利殖利率高之投資標的以獲取穩定配息,改善目前財務收入。目前投資於股票及人民幣定存等商品。
- 本校經營現況與未來發展,持續落實教學、研究與服務工作的推動,也對充裕本校預算來源規劃,以支持學校各項行動方案的推展。本校對於未來預算收入提升,擬朝七大方向:增加學雜費收入、爭取教育部補助計畫經費因應、精進特色研究,持續爭取國家大型科研計畫經費、積極輔導產業團隊,創造合作價值、回應社區與產業界需求,優化推廣教育服務、提升募款運作績效、加強資金投資管理,提升投資收益。

### Sustainable Development

- The Alumni House fund-raising program for the 30th anniversary of the university in 2010 received strong alumni support. The Alumni House was successfully refurbished in March 2013. In 2014, the NSYSU "Fundraising Strategy Planning and Promotion Committee" was formed to attract donations to the University Endowment Fund and support future projects.
- Our Operation Center of Industry and University Cooperation was officially organized as a tier-1 administrative center in January 2010. It was subsequently reorganized as the Office of Industrial Collaboration and Continuing Education Affairs on August 1, 2014. Its responsibilities include industry-university collaboration, technology transfer, innovation incubation and continuing education.
- NSYSU has established a "Fund Operations Team" to increase our income through more flexible use of the University Endowment Fund. Our investment strategy is based on long-term securities investments of high-yield shares. Current investments include shares and RMB term deposits.
- NSYSU is committed to achieve and sustain its operation of excellence. We are also working to increase university income to support our various initiatives. NSYSU will increase our future budgeted income in 7 ways: increased tuition fees and lobby for MOE project funding, engage in specialty research to compete for large national science project grants, industry assistance teams to create collaborative value and respond to community and industry requirements, optimize continuing education services, boost fund-raising performance, and strengthen investment management to increase returns.

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